



# **MI COVID RESPONSE DATA AND MODELING UPDATE**

September 14, 2021

# Executive Summary – All Indicators Show Increases

## Michigan remains at High Transmission

**Percent positivity** (9.7%) is increasing for 2.5 months (9.2% last week)

**Case rate** (173.1 cases/million) is increasing for 2.5 months (169.2 last week)

Michigan has 41<sup>st</sup> lowest number of cases (39<sup>th</sup> last week), and 15<sup>th</sup> lowest case rate (14<sup>th</sup> last week) in the last 7 days

>99% of positive tests available for sequencing in Michigan were **Delta variant** in the last 4 weeks

**Percent of inpatient beds occupied by individuals with COVID** (6.8%) is increasing for eight weeks (up from 5.8% last week).

Michigan has 13<sup>th</sup> lowest inpatient bed utilization (10<sup>th</sup> last week) and 13<sup>th</sup> lowest adult ICU bed utilization (9<sup>th</sup> last week)

**Death rate** (1.8 deaths/million) is increasing for six weeks (1.7 last week). There were 123 COVID deaths between Aug 31-Sep 6.

Michigan has the 25<sup>th</sup> lowest number of deaths (29<sup>th</sup> last week), and T8<sup>th</sup> lowest death rate (T7<sup>th</sup> last week) in the last 7 days

7-day average **state testing rate** is steady at 2,967.5 tests/million/day. **Daily diagnostic tests (PCR)** is 29.6K per day, and the **weekly average for PCR and antigen tests** conducted in Michigan is 70.7K.

10.35 million **COVID-19 vaccine** doses administered, 51.3% of population is fully vaccinated (5.1 million people)

## Science Round Up

Ridge regression model projects continued increases for Michigan although case trends may be slowing

CDC models project continued increases in hospitalizations and deaths

Children in Michigan can get infected with SARS-CoV-2 and spread the virus to others in the classroom setting

The proportion of kids getting sick with COVID-19 is increasing

Missed in person school negatively impacts children and can occur large uncontrolled outbreaks within schools

43% of Michigan school districts have mandatory mask policy for students in all K-12 grades

Case rates among children are higher in counties where school districts do not have mask policies

# Global and National Comparisons: US cases increasing

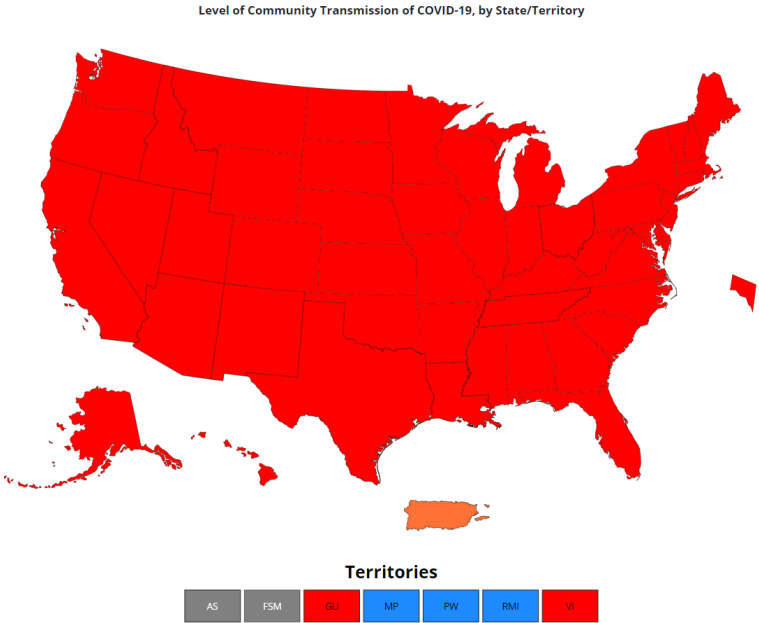
What we see today (data through 9/13):

- Globally, 224,880,598 cases and 4,633,870 deaths\*
- Countries with the highest case count are U.S. (40,986,279), India (33,264,175), and Brazil (20,999,779)\*
- Nearly all US jurisdictions have high community transmission†
- States with the highest seroprevalence (national seroprevalence: 20.6% [95% C.I. 20.2% - 21.1%] through end of July)†:

State	Est. Seroprevalence	95% CI
1. South Dakota	34.1%	23.5% - 49.2%
2. Mississippi	33.8%	29.9% - 37.2%
3. Ohio	33.3%	30.6% - 36.2%
4. Texas	31.9%	26.9% - 37.0%
<b>13. Michigan</b>	<b>28.1%</b>	<b>24.9 - 31.0%</b>

— Other notable states: AL (29.2%), AR (22.9%), GA (14.4%), FL (24.1%), LA (12.7%), MO (26.5%), MS (31.5%), TN (29.2%)

Source: \* Johns Hopkins COVID-19 Dashboard; † CDC COVID Data Tracker



National Comparison

Spread

Severity

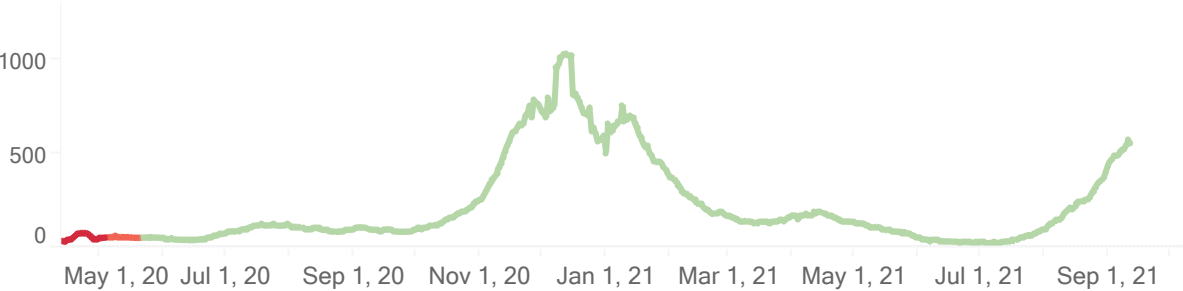
Public Health  
Response

Other  
Indicators

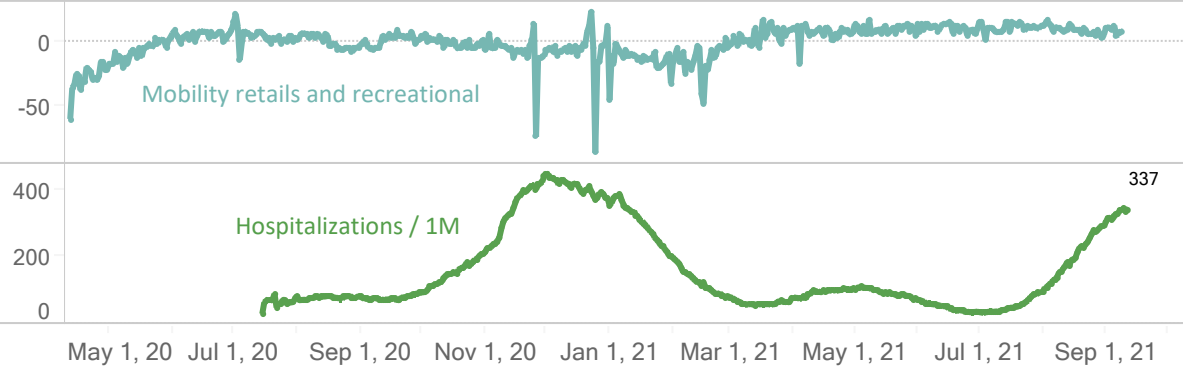
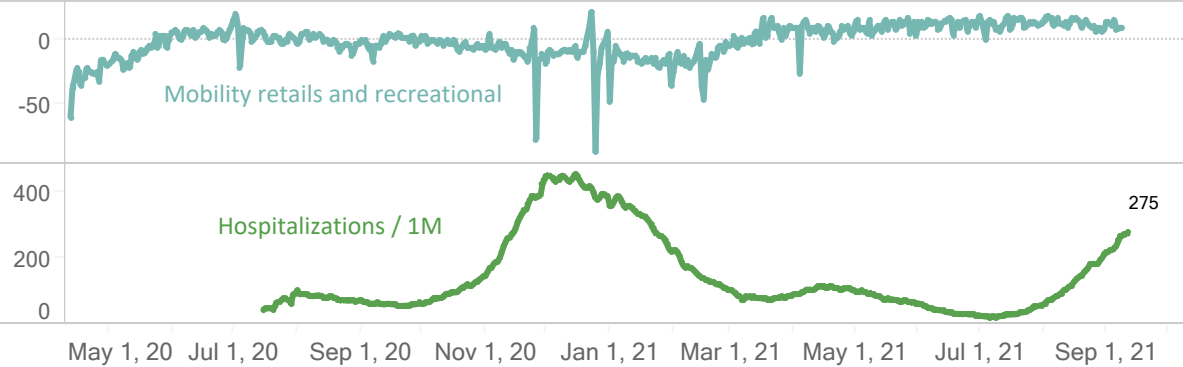
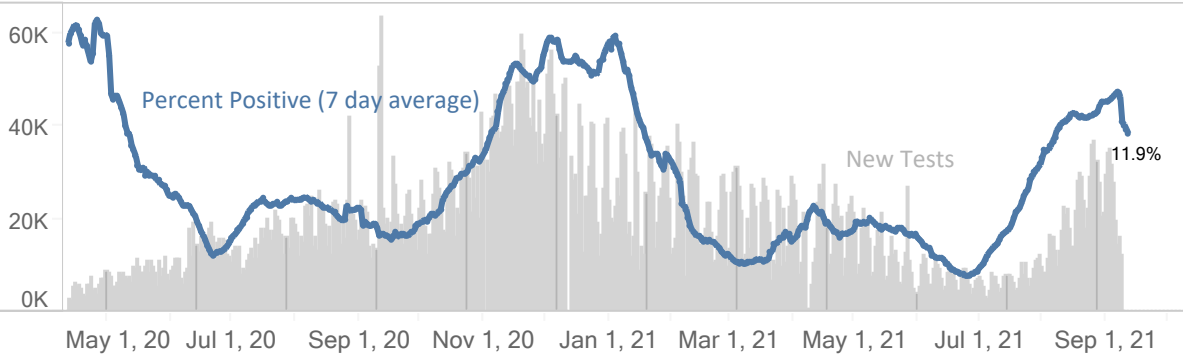
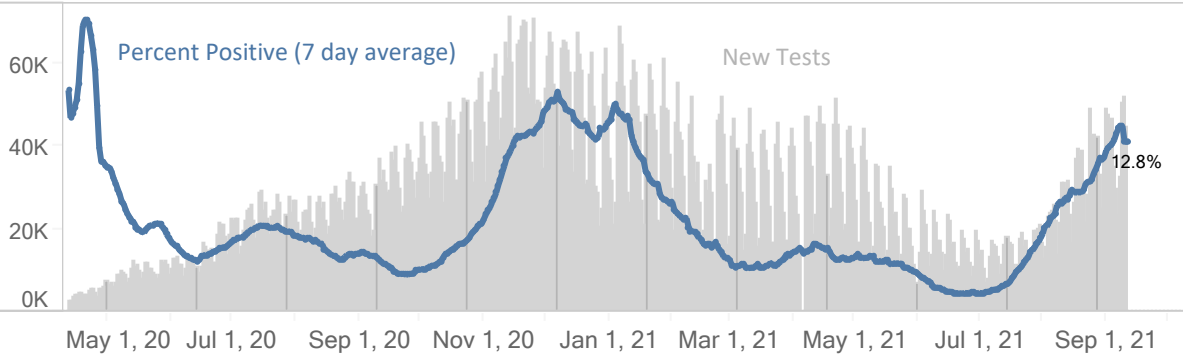
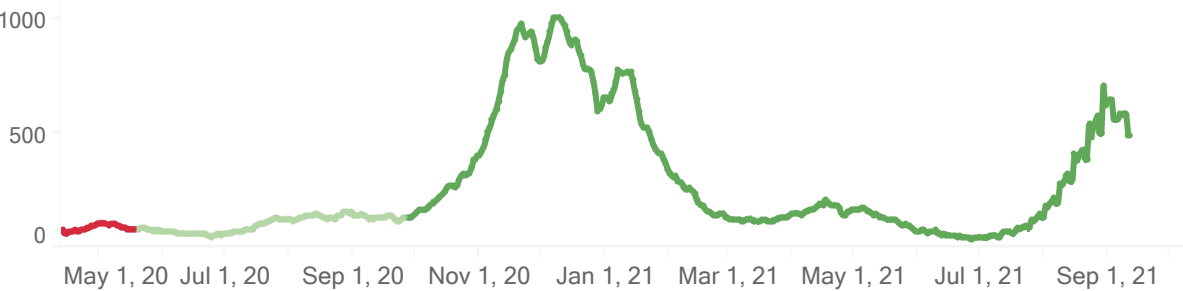
Science  
Round-up

# State Comparisons: Ohio and Indiana

Ohio Confirmed New Cases / 1M (7 days average)

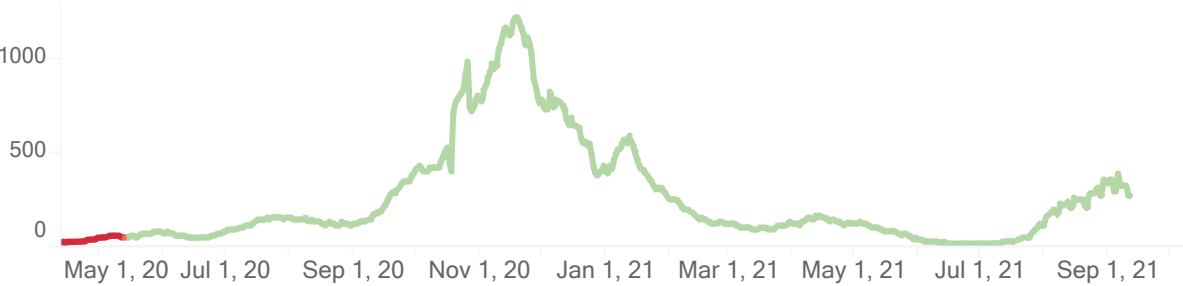


Indiana Confirmed New Cases / 1M (7 days average)

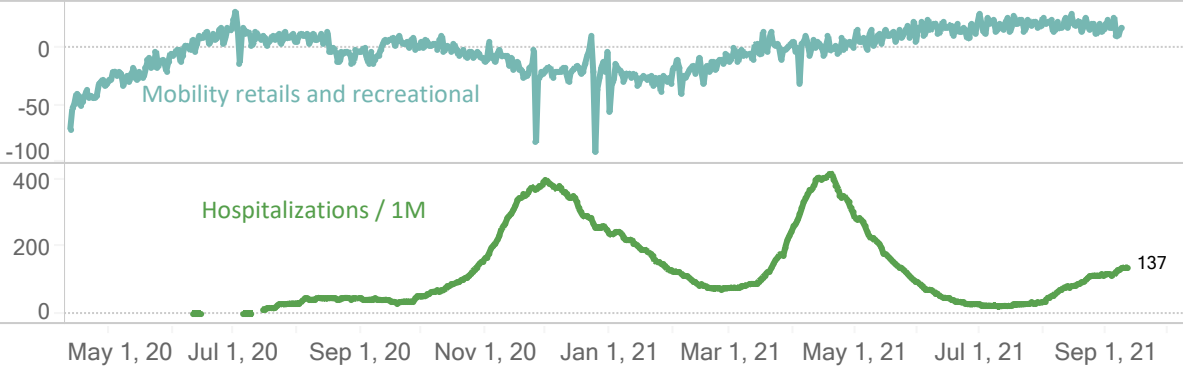
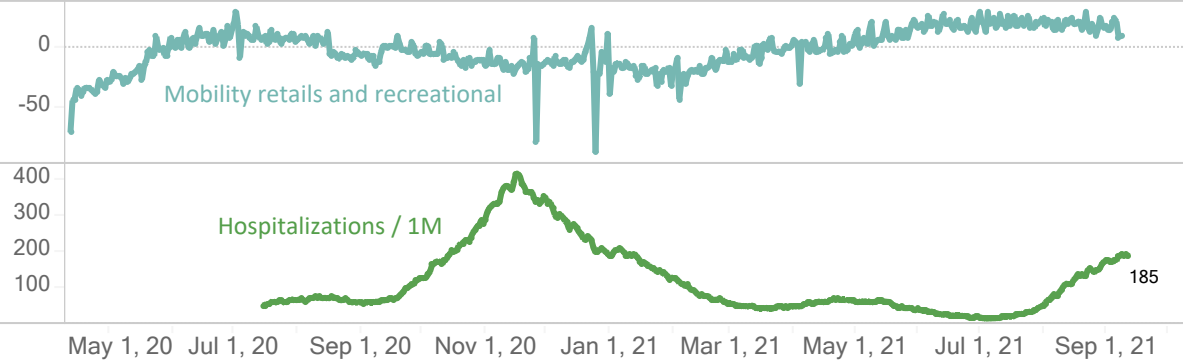
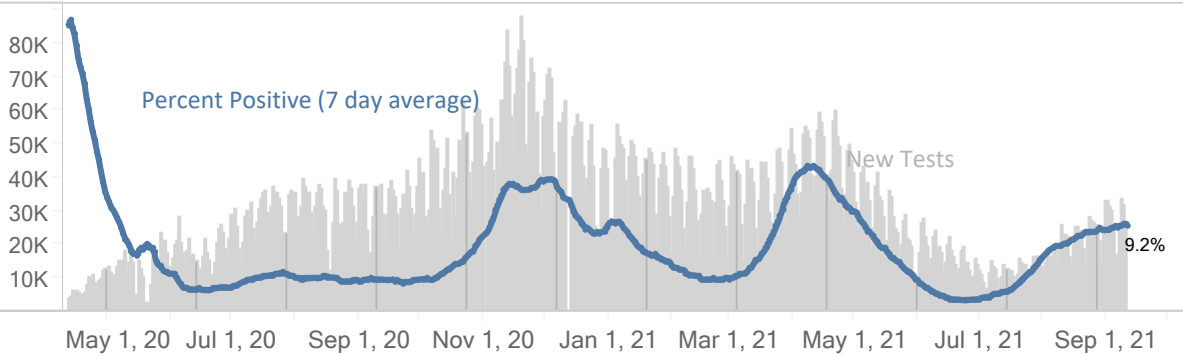
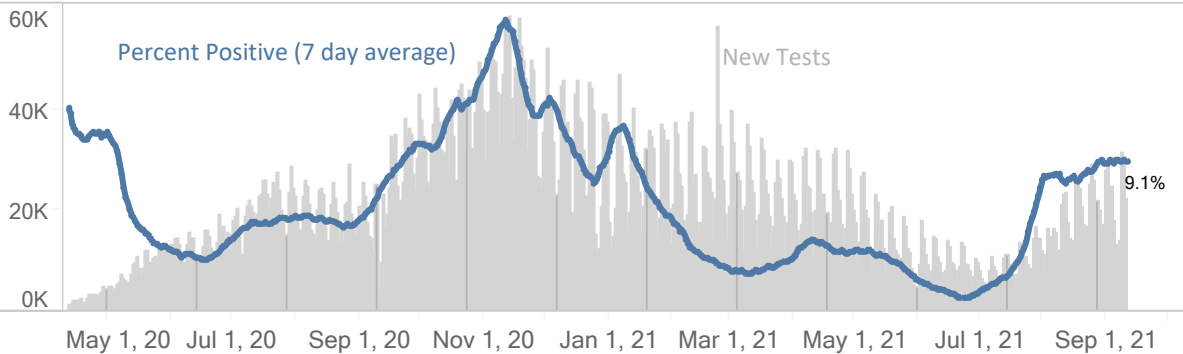
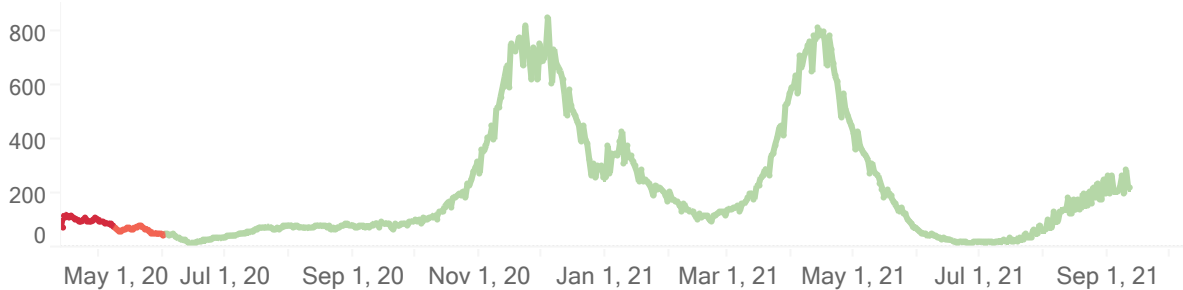


# State Comparisons: Wisconsin and Michigan

Wisconsin Confirmed New Cases / 1M (7 days average)



Michigan Confirmed New Cases / 1M (7 days average)



# Key Messages: COVID-19 is Spreading Faster with Delta

## Statewide positivity has increased to 9.7% (last week: 9.2%)

- Increasing for two and half months (Jun 26 low of 1.2%)
- Positivity is increasing in most MERC regions; and six regions > 10%

## Case rate (173.1 cases/million) increasing for two and half months (last week: 169.2 cases/million)

- Increasing for two and half months (Jun 26 low)
- Cases per million are increasing in most MERC regions

## Michigan is at High Transmission level

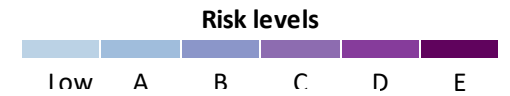
- More than 90% of the counties in Michigan are at high transmission level
- CDC recommends all individuals, regardless of vaccination status, should mask indoors
- The U.S. is at high transmission level (248 cases/100,000 in last 7 days) with 54 states/territories in substantial or high transmission

## Number of active outbreaks is up 26% from last week

- 132 new outbreaks were identified in the past week
- K-12 reported the most total outbreaks (108) and new outbreaks (71) this week

# Confirmed and probable case indicators

Table Date: 9/13/2021 (7 days from date table was produced: 9/6/2021)

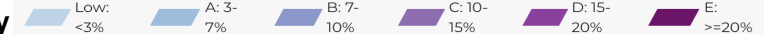


	CDC Transmission Risk Level	Absolute Cases (per million)	CDC Case Trend	Average Percent Positivity	Positivity Trend	Tests (per million)	% IP Beds Occupied by COVID-19 Cases	% Occupied IP Beds Trend	Absolute Deaths (per million)	Death Trend
Detroit	High	145.0	decline [8 days]	8.0	Increase - 8wk	2983.5	5.8	Decrease - 1wk	1.4	Increase - 6wk
Grand Rapids	High	207.9	elevated incidence growth	12.6	Increase - 10wk	3283.1	9.3	Increase - 8wk	1.5	Increase - 1wk
Kalamazoo	High	194.6	elevated incidence growth	11.9	Decrease - 2wk	2602.7	8.0	Decrease - 1wk	2.1	<20 wkly deaths
Saginaw	High	192.0	elevated incidence growth	11.5	Decrease - 1wk	2624.8	6.8	Increase - 7wk	2.1	<20 wkly deaths
Lansing	High	190.3	elevated incidence plateau	9.2	Decrease - 1wk	2645.0	10.0	Increase - 8wk	3.4	<20 wkly deaths
Traverse City	High	153.7	elevated incidence plateau	10.0	Increase - 1wk	2125.2	6.8	Increase - 7wk	2.3	<20 wkly deaths
Jackson	High	257.2	elevated incidence growth	13.0	Increase - 2wk	3004.4	13.0	Increase - 2wk	2.4	<20 wkly deaths
Upper Peninsula	High	291.5	elevated incidence growth	12.3	Increase - 7wk	2511.5	5.2	Decrease - 1wk	2.4	<20 wkly deaths
Michigan	High	173.1	elevated incidence plateau	9.7	Increase - 10wk	2967.5	6.8	Increase - 8wk	1.8	Increase - 6wk

Cases



Positivity



National Comparison

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Severity

Public Health Response

Other Indicators

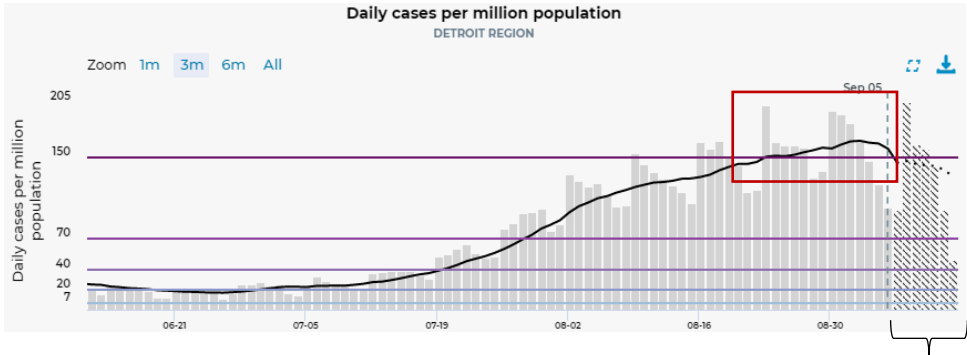
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# Regional Time Trends

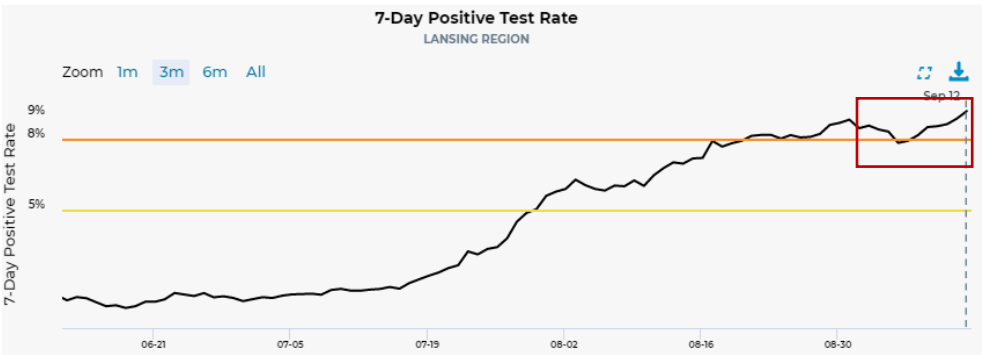
- Case Rate and Positivity trend indicators for four regions on the postage stamp suggested declines: Detroit, Kalamazoo, Saginaw, and Lansing
- Graphical display of these four regions display more of a plateau or slight increases
  - Case rate lag is impacting case rate trends
  - Positivity levels are above substantial or high thresholds
- **At this point, cumulative data do not suggest that the delta surge in Michigan is subsiding**

## Case Rate

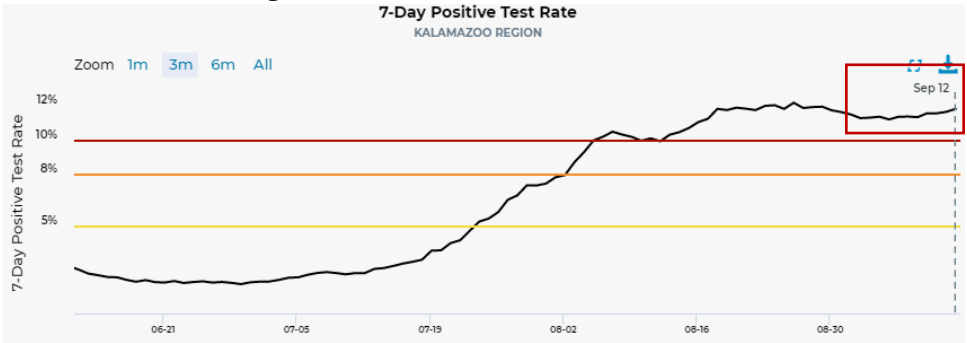
Detroit Region



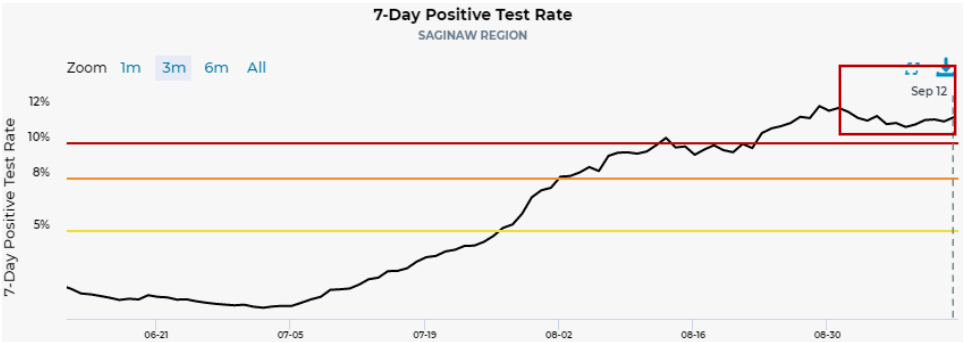
Lansing Region



Kalamazoo Region



Saginaw Region



All charts represent data from 06/12/21 – 09/12/21

Source: MI Start Map; MDOC excluded

Case data lag period by onset date

National Comparison

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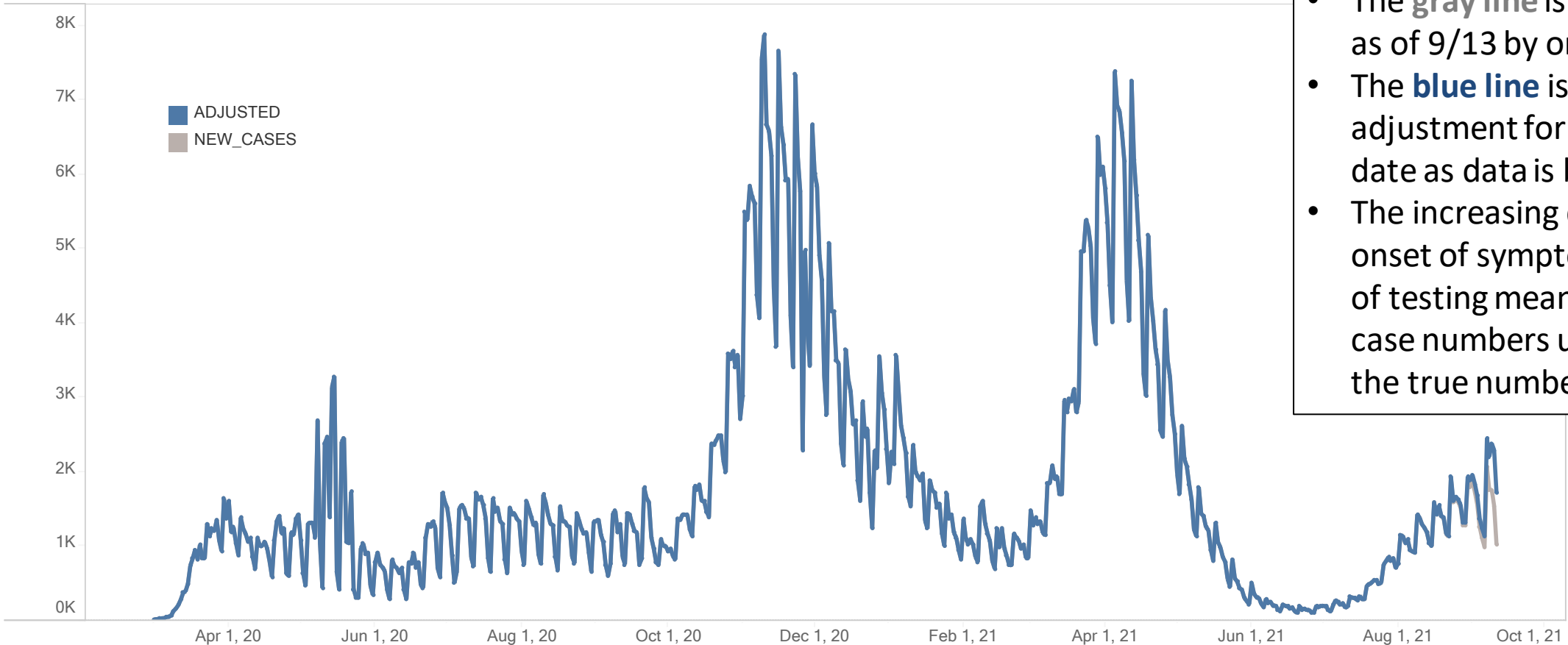
Other  
Indicators

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# Michigan Lag adjusted new COVID cases by onset date

New confirmed cases by onset actual and adjusted as of September 13, 2021 (-2 days)



- The **gray line** is cases reported as of 9/13 by onset date.
- The **blue line** is the expected adjustment for cases by onset date as data is backfilled
- The increasing delay between onset of symptoms and date of testing means that recent case numbers underestimate the true number of cases

# Overview of metrics for individuals < 18

	Region	Population (<12 yrs)	Population (<18 yrs)	Cumulative Case Count (<12 yrs)	7-day Average Daily Case Count (<12 yrs)	7-day Average Daily Case Rate per Million (<12 yrs)	7-day Average Daily Pediatric Hospitalization Count (<18 yrs)	7-day Average Daily Pediatric Hospitalization Rate per Million (<18 yrs)	7-day Average Daily Death Count (<12 yrs)
1	Detroit	735529	1134247	32881	103.9	141.3	28.7	25.3	0
2	Grand Rapids	230120	350652	11305	44.1	191.6	7.9	22.5	0
3	Kalamazoo	140422	214801	6179	24.9	177.3	0.4	1.9	0
4	Saginaw	78759	122834	3671	13.7	173.9	0.7	5.7	0
5	Lansing	78140	119915	3705	16.4	209.9	3.9	32.5	0
6	Traverse City	53099	83462	1778	4.6	86.6	0.0	0.0	0
7	Jackson	41274	64091	1764	10.7	259.2	0.1	1.6	0
8	Upper Peninsula	34645	53875	1699	13.6	392.6	0.0	0.0	0
99	Michigan	1391988	2143877	63065	234.1	168.2	41.7	19.5	0

- Each day more than 230 children under age 12 become infected with COVID-19, 40 more children per day than last week
- Pediatric case rates have increased from 138.9 to 168.2 with all regions in the state except Traverse City increasing.
- The Upper Peninsula has more than doubled, going from 190.5 to 392.6 cases per million children since last week
- More than 40 children (<18) are admitted to the hospital each day.
- Note: Data as of 9/13; case data 9/6, hospitalization data 9/13. Hospitalization data is for pediatric patients (<18)

National Comparison

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Severity

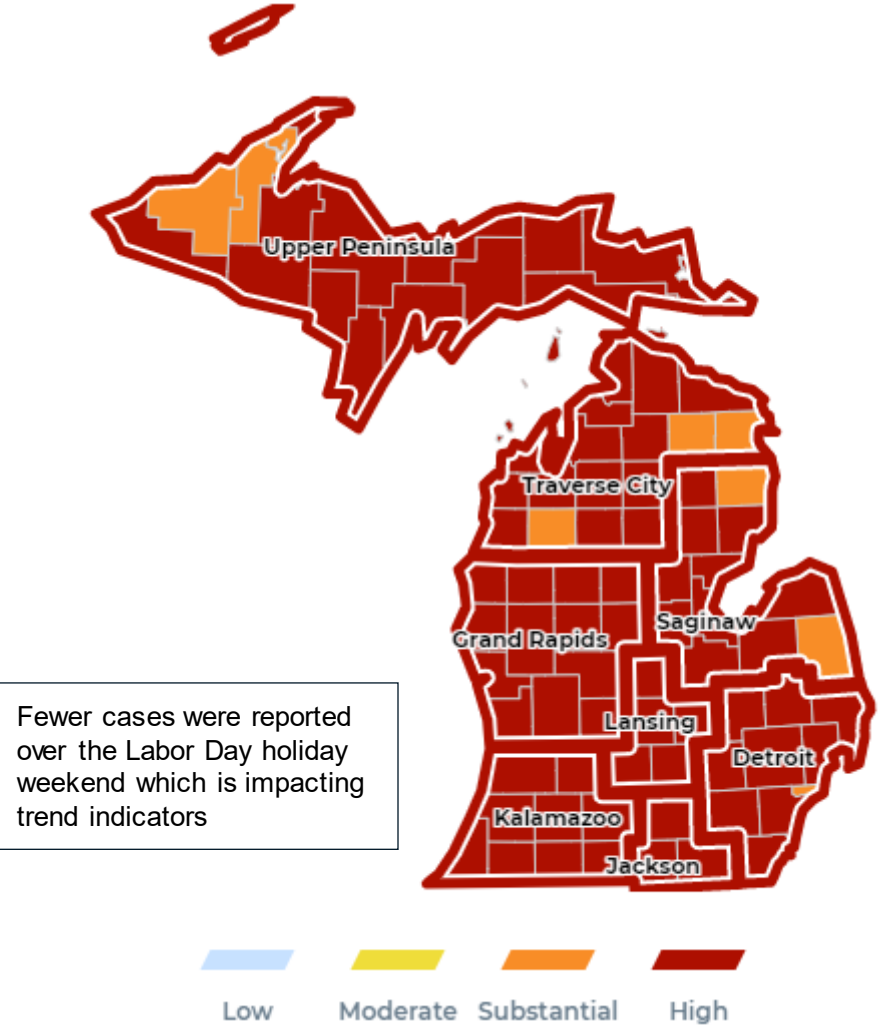
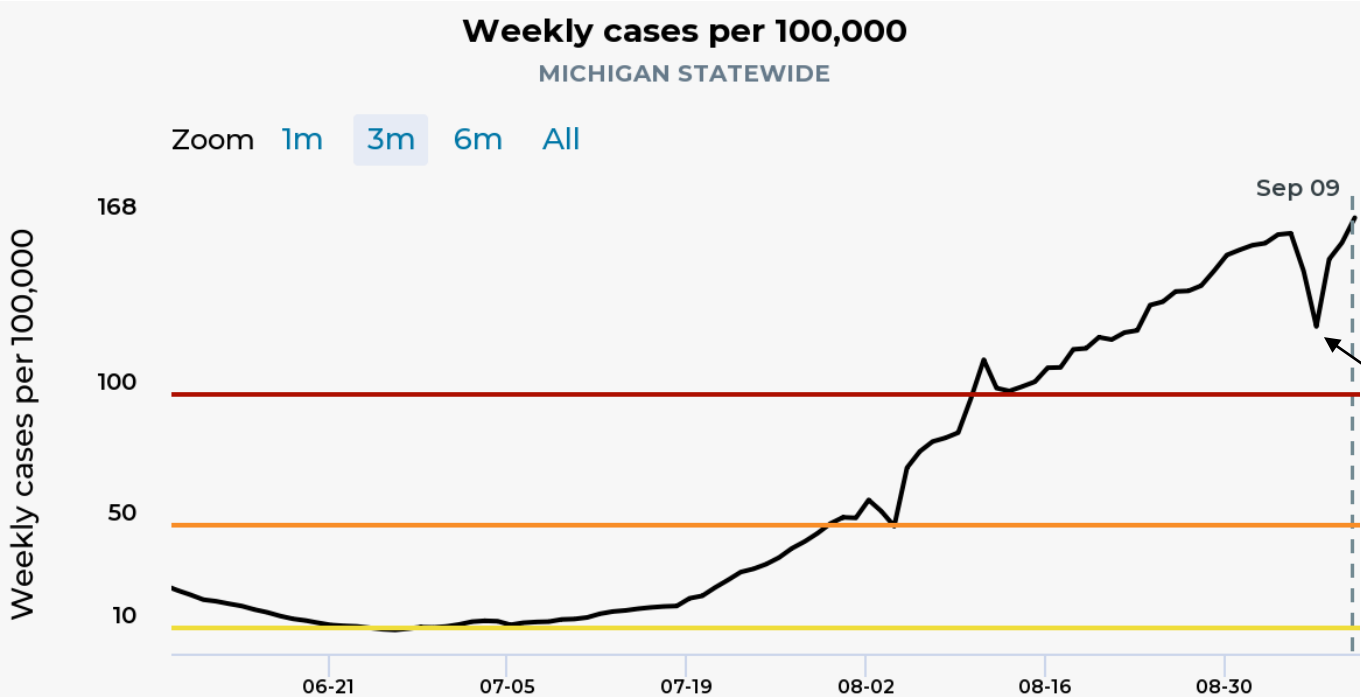
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# Michigan at High Transmission Level and continuing to increase

[Dashboard](#) | [CDC](#) | [MI Start Map](#) for most recent data by reporting date

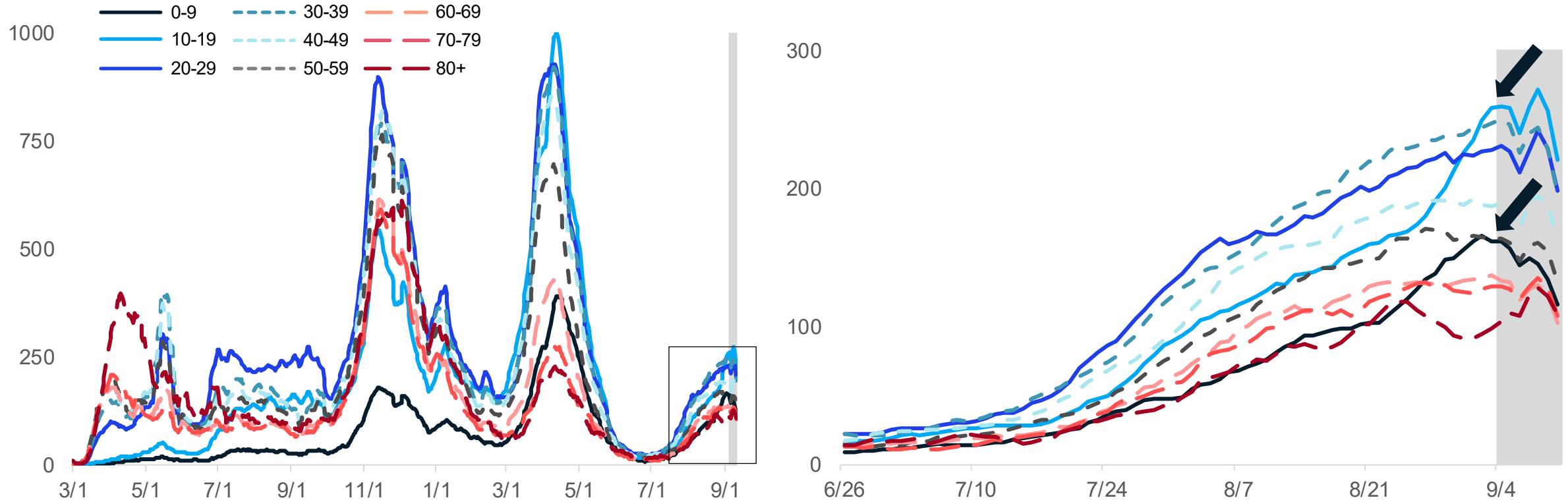


Fewer cases were reported over the Labor Day holiday weekend which is impacting trend indicators

Source: MI Start Map; data through 9/13/2021

# Case Rate Trends are Increasing for All Age Groups

Daily new confirmed and probable cases per million by age group (7-day rolling average)



- Case rate trends for all age groups are increasing
- Case rates for all age groups are between 100 and 260 cases per million (through 9/3)
- Case rate trends are highest for **10-19-year-olds** followed by 30-39, 20-29, 40-49, and **0-9**

Note: Case information sourced from MDHHS and reflects date of onset of symptoms  
Source: MDHHS – Michigan Disease Surveillance System

National Comparison

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Severity

Public Health  
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Indicators

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# Number of Cases and Case Rates are Increasing for Most Age Groups

Daily new confirmed and probable cases per million by age group (7-day rolling average)

Age Group	Average† daily cases	Average† Daily Case Rate	One Week % Change (Δ #)
0-9	175.7	152.4	10% (+18)
10-19	330.7	263.5	38% (+97)
20-29	283.1	205.2	-3% (-9)
30-39	263.4	217.1	<1% (+1-5)
40-49	201.9	171.2	-3% (-6)
50-59	195.3	144.6	-5% (-12)
60-69	146.9	115.1	1% (+1-5)
70-79	86.6	112.9	-6% (-6)
80+	40.6	97.9	4% (+1-5)
Total¶	1736.3	173.1	5% (+82)

† Rolling 7-day average; ¶ Total may not reflect state due to missing age data  
Note: Case information sourced from MDHHS and reflects date of onset of symptoms  
Source: MDHHS – Michigan Disease Surveillance System

- Largest one-week growth among those 10 to 19 years of age
- Average daily number of cases (330.7) and avg. daily case rate (263.5 case/mil) are highest for those aged 10-19
- Case rate trends are increasing for those under 20
  - One-week decreases are likely due to backfill and the labor day holiday
- Case rates bottomed out on June 26, 2021

National Comparison

Spread

Severity

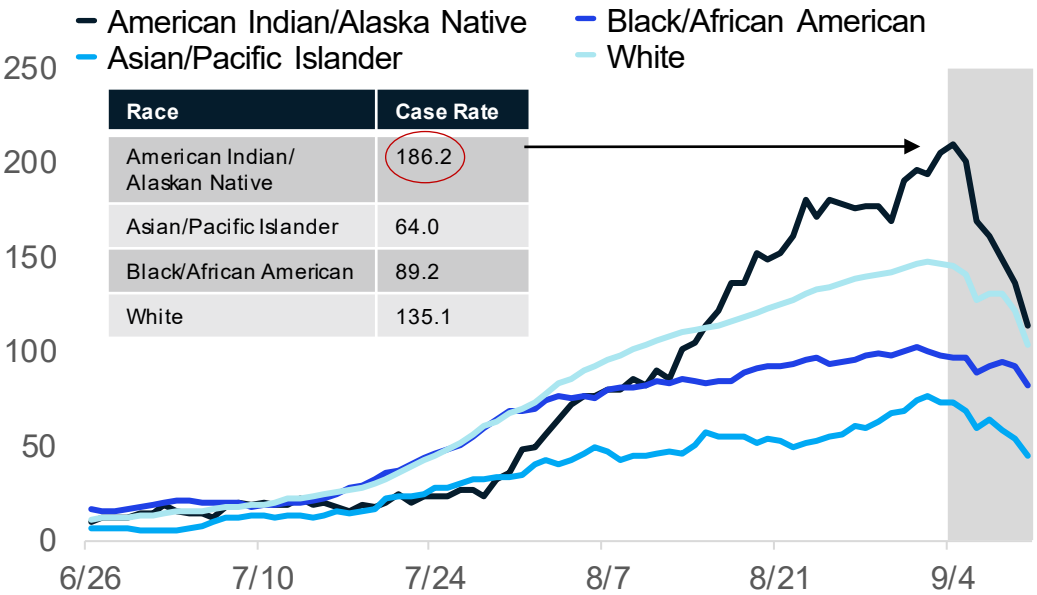
Public Health  
Response

Other  
Indicators

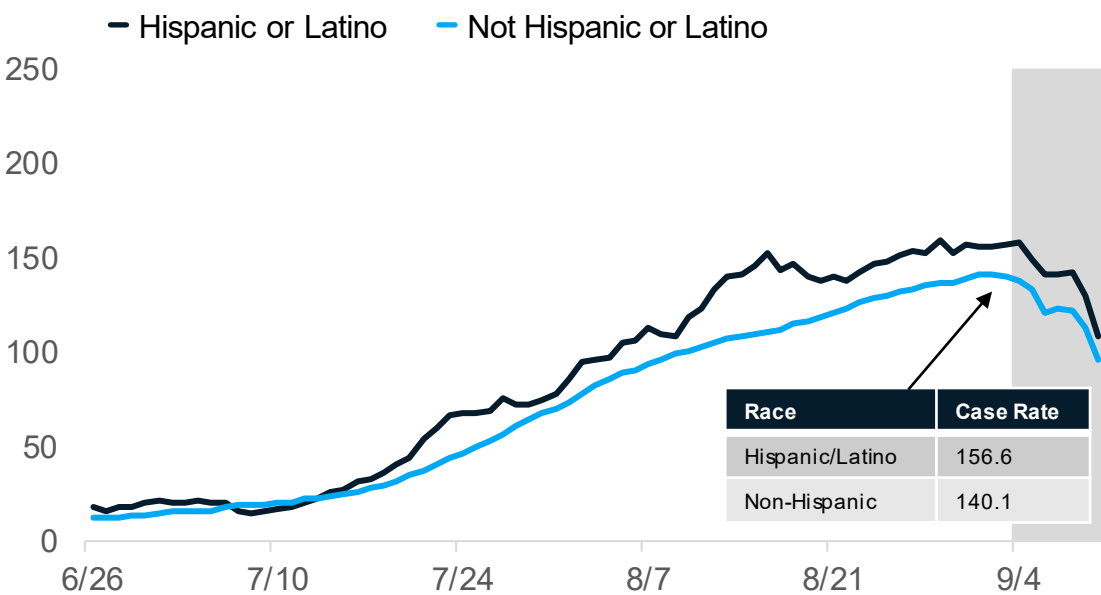
Science  
Round-up

# Case Rates for All Report Racial and Ethnic Groups are Increasing

Daily new confirmed and probable cases per million (7 day rolling average) by race category



Daily new confirmed and probable cases per million (7 day rolling average) by ethnicity category



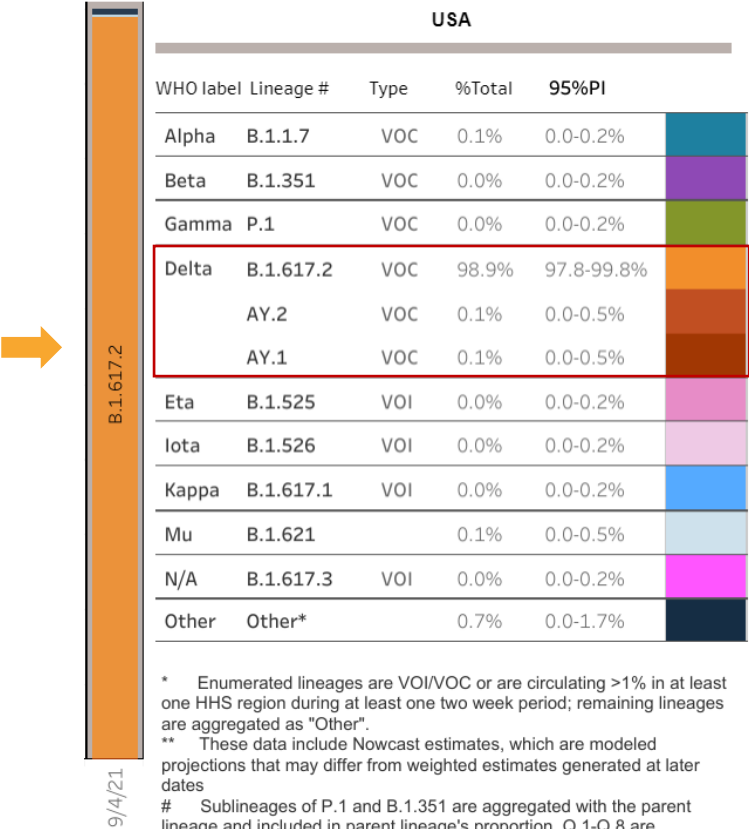
## Updates since last week:

- Cases per million are increasing for all races and ethnicities
- **American Indian/Alaskan Native have the highest case rates**
- In the past 30 days, 22% (↑2%) of race data and 27% (↑3%) ethnicity data was either missing or reported as unknown

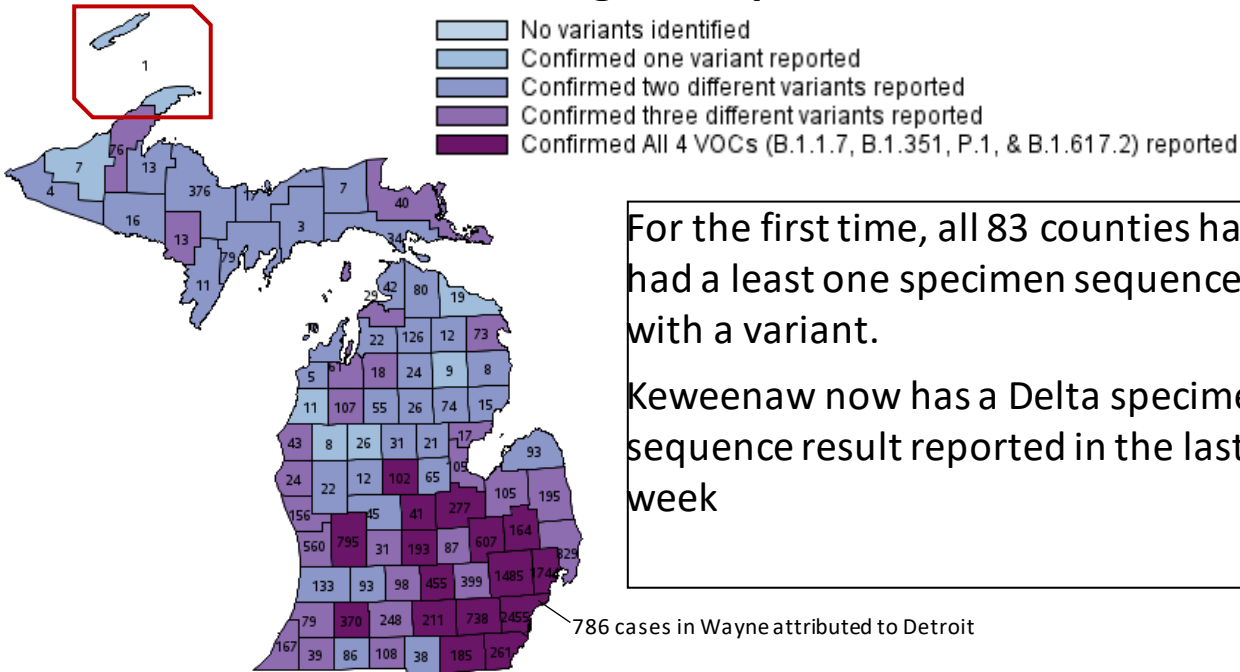
Note: Case information sourced from MDHHS and reflects date of death of confirmed and probable cases.  
Source: MDHHS – Michigan Disease Surveillance System

# Identified COVID-19 Cases Caused by All Variants of Concern (VOC) in US and Michigan

Variants Circulating in United States, Aug 29 – Sep 4 (NOWCAST)



Variants of Concern in Michigan, Sep 13



Variant	MI Reported Cases <sup>¶</sup>	# of Counties	% Specimens in last 4 wks
B.1.1.7 (alpha)	13,697*	81	0.3%
B.1.351 (beta)	88	24	0%
P.1 (gamma)	336	35	0.3%
B.1.617.2 (delta)	2,127 (↑321)	77 (↑3)	99.4%

\* 534 cases within MDOC; <sup>¶</sup> 43 cases with county not yet determined

Data last updated Sep 13, 2021  
Source: <https://covid.cdc.gov/covid-data-tracker/#variant-proportions> and MDSS

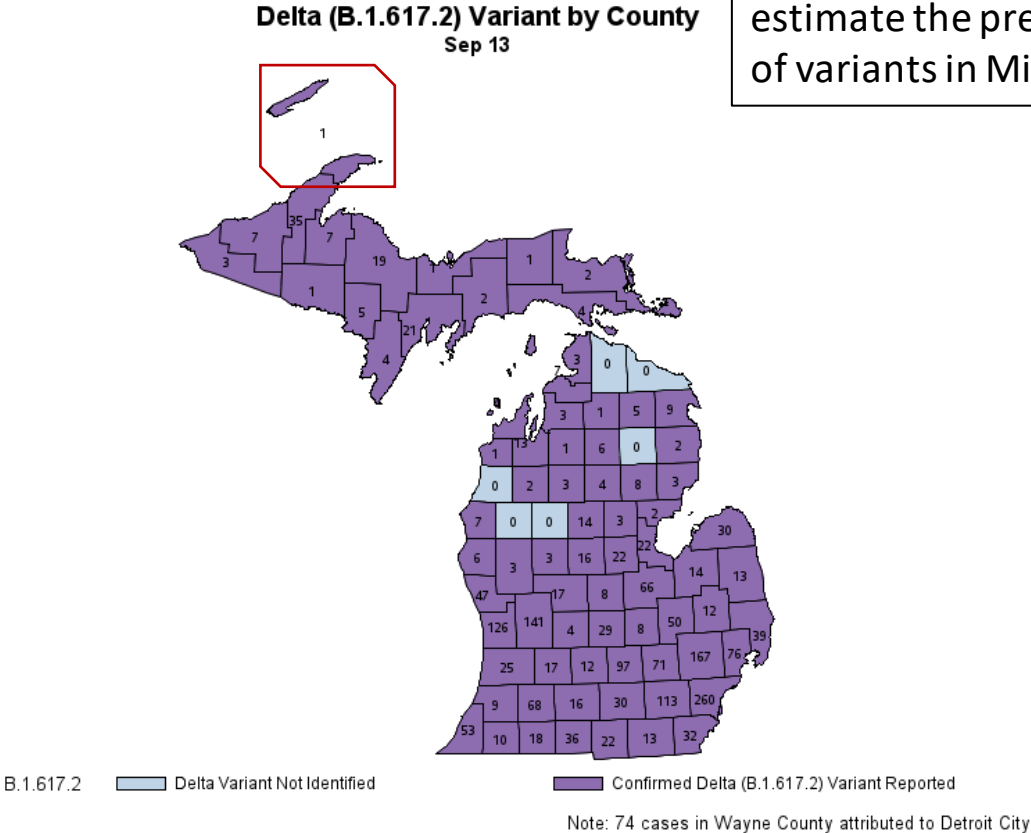
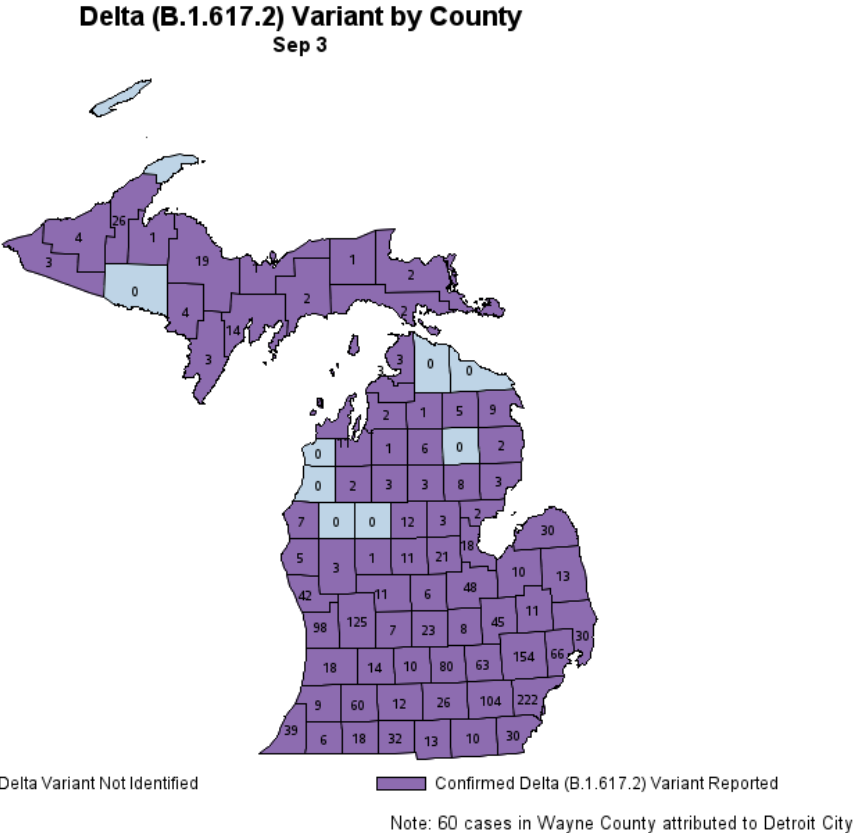


# Identified COVID-19 Delta Variants by County

Last week (Sep 3, 2021)

This week (Sep 13, 2021)

*Note: The low number of specimens recently submitted for sequencing limits the ability to estimate the prevalence of variants in Michigan*

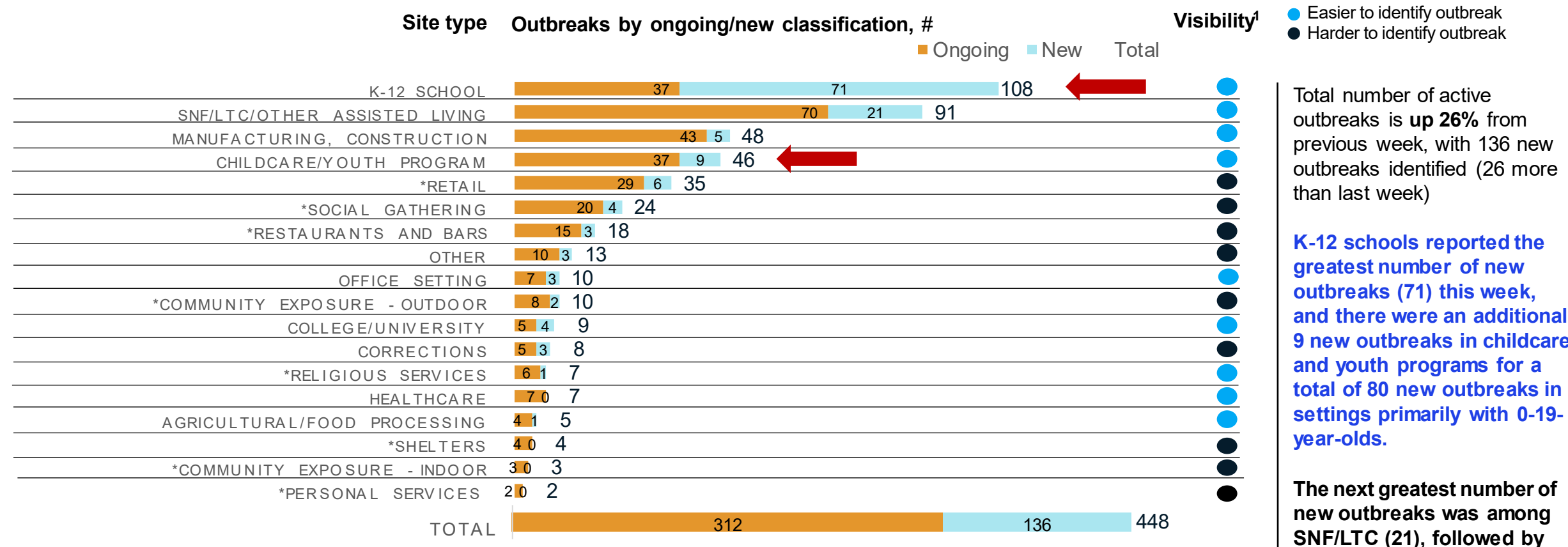


Data last updated Sep 3, 2021  
Source: MDSS



# Number of Outbreaks Reported has Increased

Number of outbreak investigations by site type, week ending Sep 9



1. Based on a setting's level of control and the extent of time patrons/residents spend in the particular setting, different settings have differing levels of ability to ascertain whether a case derived from that setting

NOTE: Many factors, including the lack of ability to conduct effective contact tracing in certain settings, may result in significant underreporting of outbreaks. This chart does not provide a complete picture of outbreaks in Michigan and the absence of identified outbreaks in a particular setting in no way provides evidence that, in fact, that setting is not having outbreaks.

Source: LHD Weekly Sitreps

# K-12 school outbreaks, recent and ongoing, week ending Sep 9

Number of reported outbreaks increased since last week (41 to 108), including increases in High Schools (14 to 44), Middle/Jr High (6 to 17), Pre K-Elementary (19 to 39), and Administrative (2 to 4).

Region	Number of reported cases, #		# Ongoing - Excluding New	# New	Number of outbreaks	Range of cases per outbreak
Region 1		86	100		39	2-14
Region 2n	11	12			7	2-8
Region 2s	17	34			10	2-14
Region 3		80	51		20	2-30
Region 5	6	51			15	2-7
Region 6	17	54			10	2-21
Region 7	0	0			0	0-0
Region 8	7	21			7	2-10
Total		224	323		108	2-30

Grade level	Number of reported cases, #		# Ongoing - Excluding New	# New	Number of outbreaks	Range of cases per outbreak
Pre-school - elem.		98	75		39	2-30
Jr. high/middle school		50	58		18	2-13
High school		71	184		47	2-21
Administrative	5	6			4	2-5
Total		224	323		108	2-30

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Source: LHD Weekly Sitreps



# Key Messages: COVID-19 and Healthcare Capacity and COVID Severity

Hospitalizations and ICU utilization are increasing

- 3.5% of ED visits are for COVID diagnosis (up from 3.1% last week)
- Hospital admissions are increasing for most age groups this week
- Hospitalizations up 18% since last week (vs. 5% increase week prior)
- Nearly all regions experienced an increasing in hospitalization trends this week
  - Hospitalization for COVID-19 is highest in Regions 2N, 3, and 6
  - Fastest growth is in Regions 2N, 2S, and 8
- Volume of COVID-19 patients in intensive care has increased 16% since last week (vs. 9% increase last week)

Death rate is 1.8 daily deaths per million people (up from 1.7% last week)

- One week percent change is up 7% (vs. up 34% last week)
- Death rate has increased six weeks (310% increase since Jul 22 low)
- 30-day proportion of deaths among those under 60 years of age is steady from the prior week

National Comparison

Spread

Severity

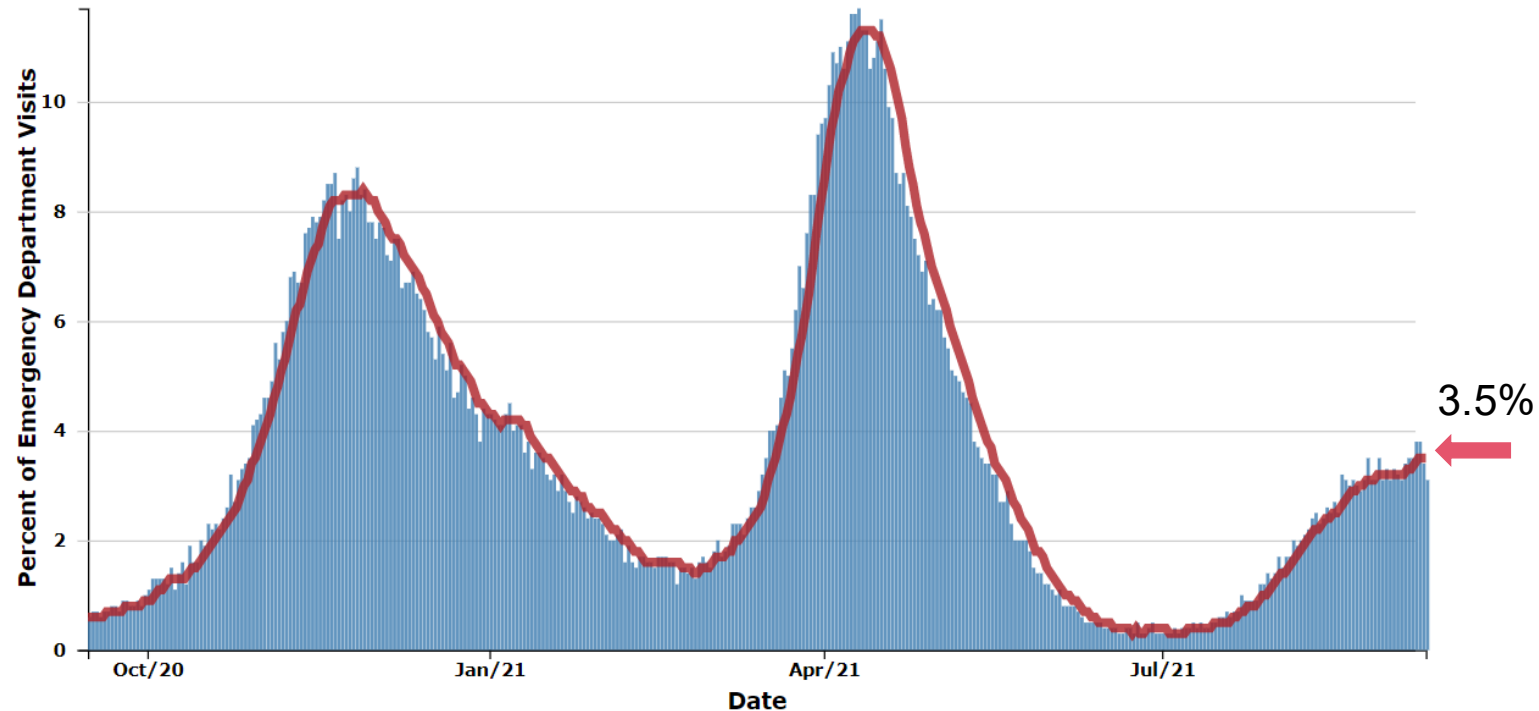
Public Health  
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Indicators

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# Michigan Trends in Emergency Department (ED) Visits for COVID-19-Like Illness (CLI)

Percentage of Emergency Department visits with Diagnosed COVID-19 in Michigan, All Ages



- Trends for ED visits have increased to 3.5% since last week (up from 3.1% week prior)
- Trends vary by age groups with all age groups seeing an increase
- Over past week, those 50-64 years saw highest number of avg. daily ED CLI visits (4.7%), but those between 25 and 74 all above state average

Source: <https://covid.cdc.gov/covid-data-tracker/#ed-visits>

National Comparison

Spread

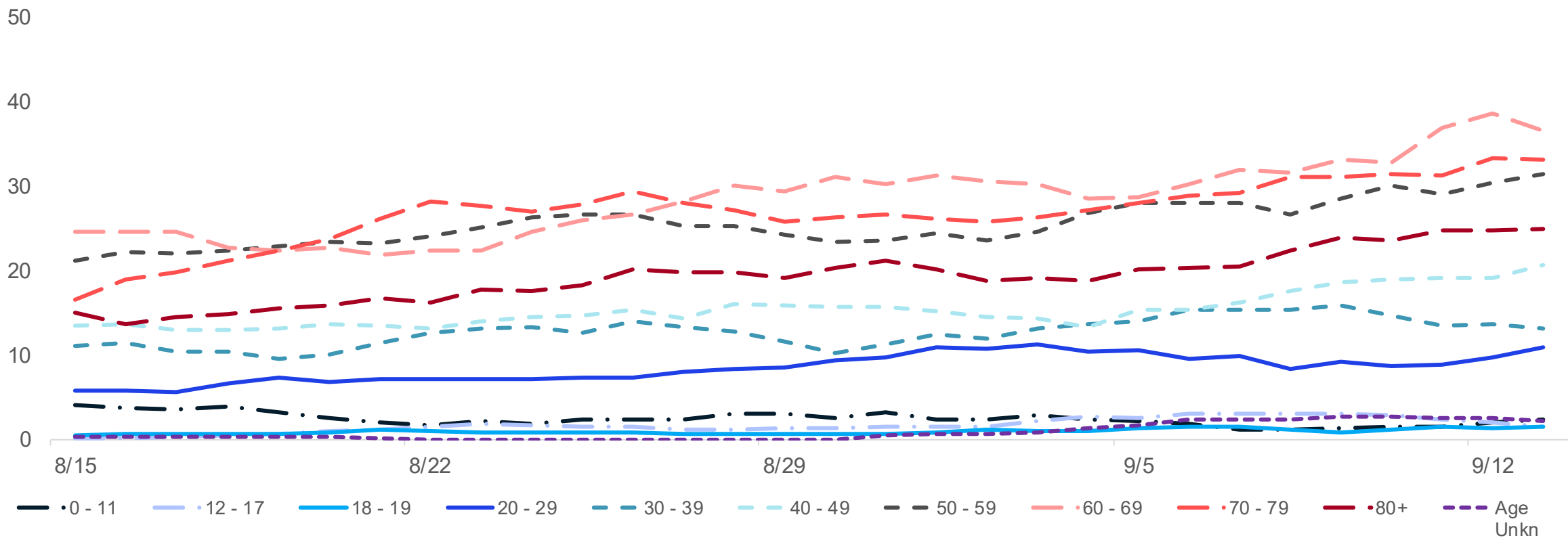
Severity

Public Health  
Response

Other  
Indicators

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# Average COVID-19 Hospital Admissions Are Increase for Most Ages

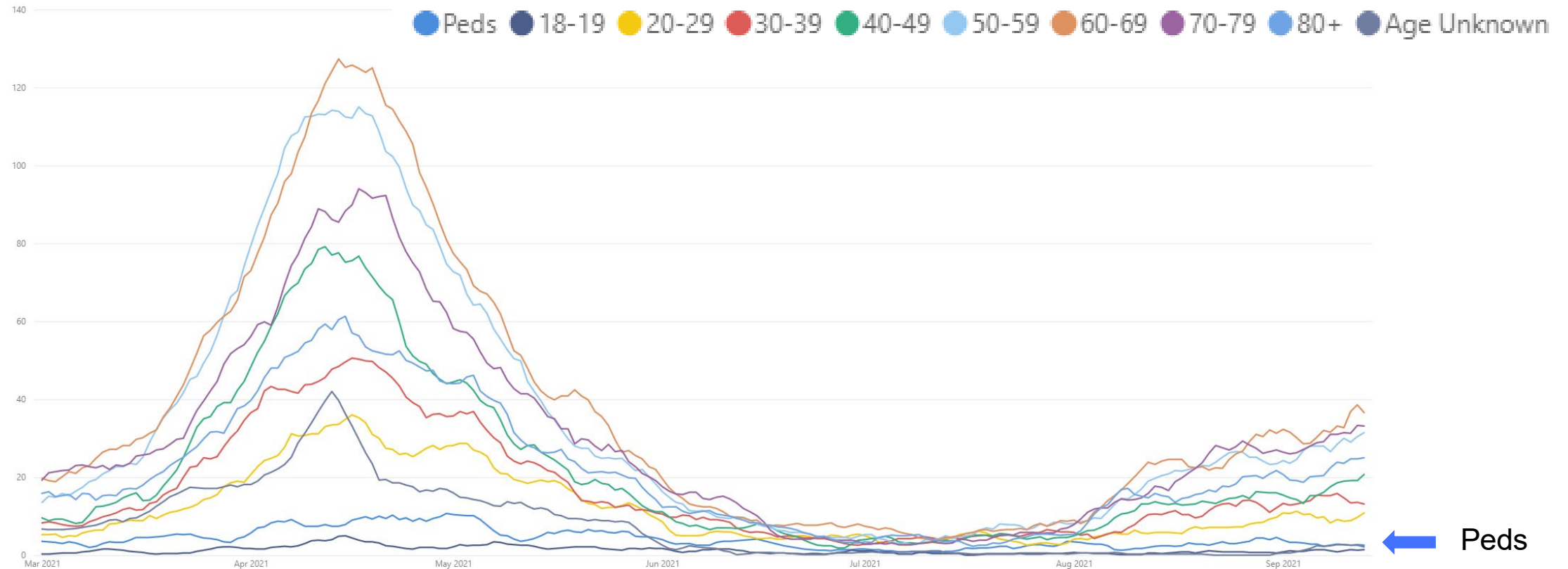


- Trends for daily average hospital admissions have increased 13% since last week (vs. 2% increase prior week)
- Most age groups experienced a one week increase in daily hospital admissions with largest increases for those over 40
- Over the past week, those 60-69 years have seen the highest number of avg. daily hospital admissions (37 admissions)

Source: CHECC & EM Resource



# Average COVID-19 Hospital Admissions Are Increase for Most Ages



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Source: CHECC & EM Resource

National Comparison

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Round-up

# Number of Hospital Admissions and Admission Rates Increasing for Most Ages

Daily new hospital admission per million by age group (7 -day rolling average)

Age Group	Average† Daily Hospital Admissions	Average† Daily Hospital Admission Rate*	One Week % Change (Δ #)
0-17	3.9	1.8	-21% (-1)
18-19	1.4	5.4	0% (0)
20-29	10.9	7.9	13% (+1)
30-39	13.1	10.8	-15% (-2)
40-49	20.7	17.6	<b>36% (+5)</b>
50-59	31.4	23.3	12% (+3)
60-69	<b>36.6</b>	28.7	21% (+6)
70-79	33.1	43.2	15% (+4)
80+	25.0	<b>60.4</b>	23% (+5)
Total¶	182.1	18.2	13% (+21)

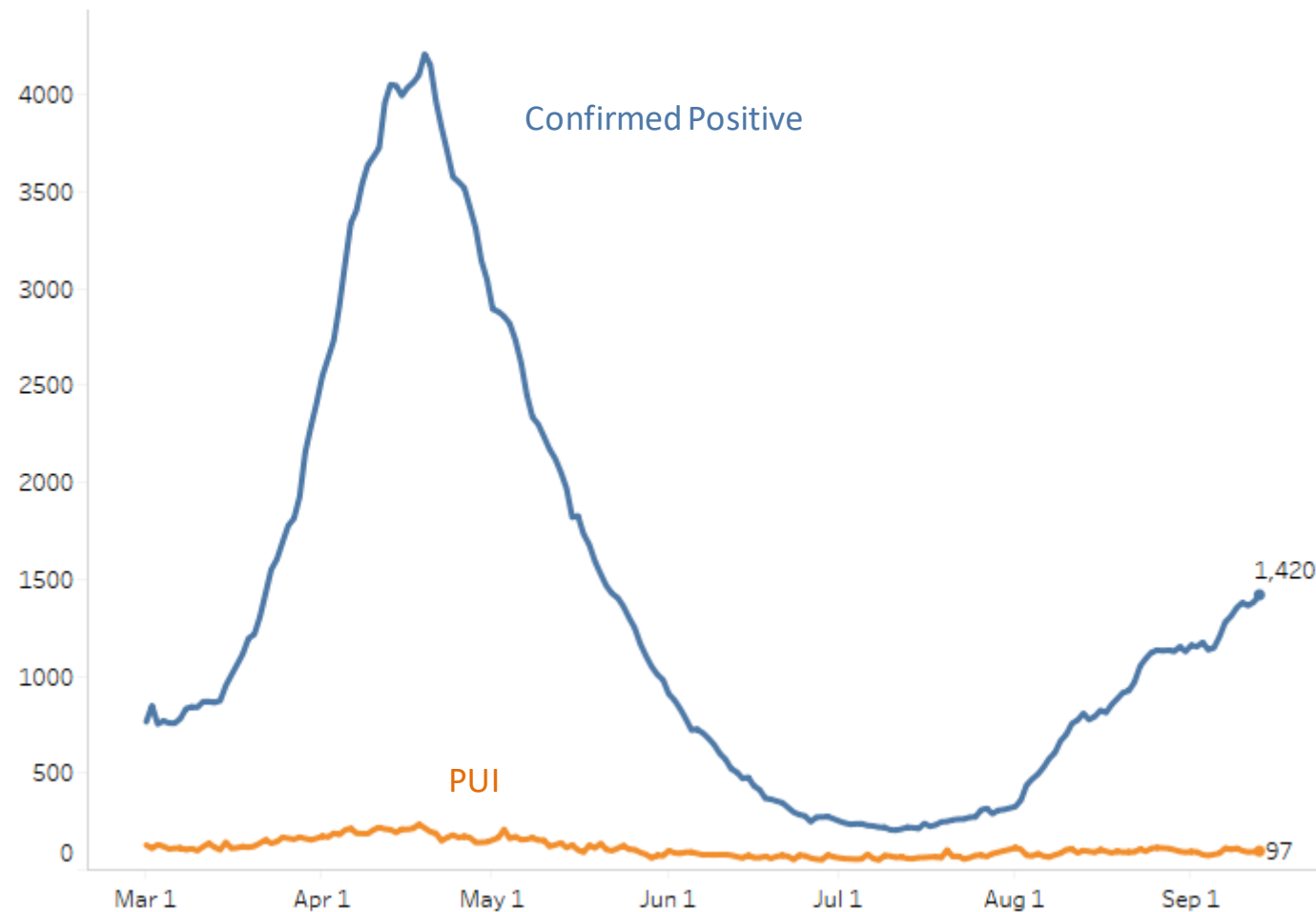
\* Rate is per 1 million residents; † Rolling 7-day average; ¶ Total may not reflect state due to missing age data  
Note: Case information sourced from MDHHS and reflects date of onset of symptoms  
Source: MDHHS – Michigan Disease Surveillance System

- Largest one-week growth in numbers of admissions was among those 40-49 years of age
- Average number of daily hospital admissions (36.6) are highest for those aged 60-69
- Average daily hospital admission rate (60.4 hospital admissions/million) are highest for those aged 80+

Note: for some age groups, small changes in number of hospitalization admissions can cause large change in One Week Percent Change. For example, the 0-17 years age group has a 21% decline since last week, based on reduction of 1 daily admission. Slide 53 provides additional context for this group.

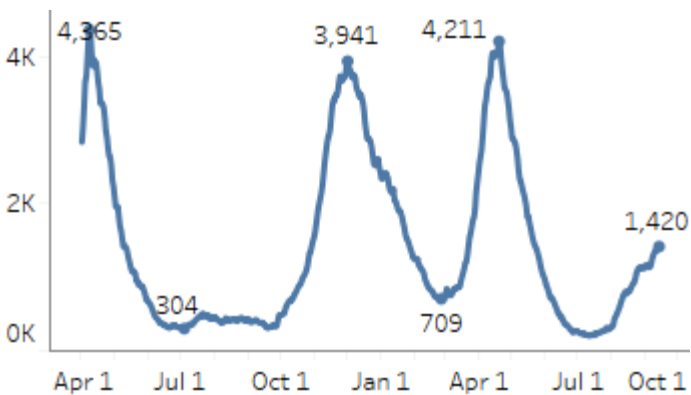
# Statewide Hospitalization Trends: Total COVID+ Census

Hospitalization Trends 3/1/2021 – 9/13/2021  
Confirmed Positive & Persons Under Investigation (PUI)



The COVID+ census in hospitals has increased 18% from the last week (previous week was up 5%).

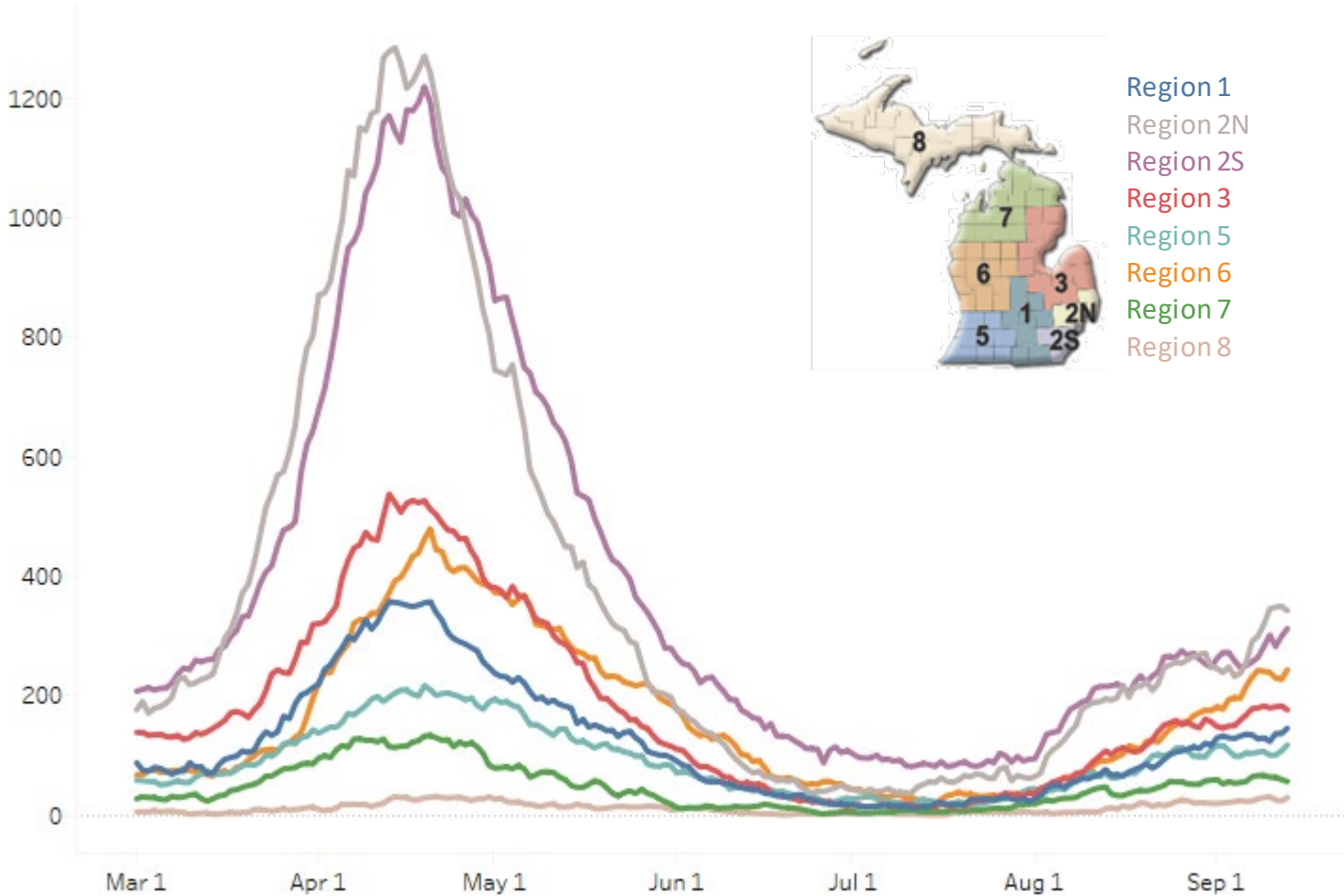
Hospitalized COVID Positive Long Term Trend (beginning March 2020)





# Statewide Hospitalization Trends: Regional COVID+ Census

Hospitalization Trends 3/1/2021 – 9/13/2021  
Confirmed Positive by Region



7/8 regions have increased COVID+ hospital census compared to last week.

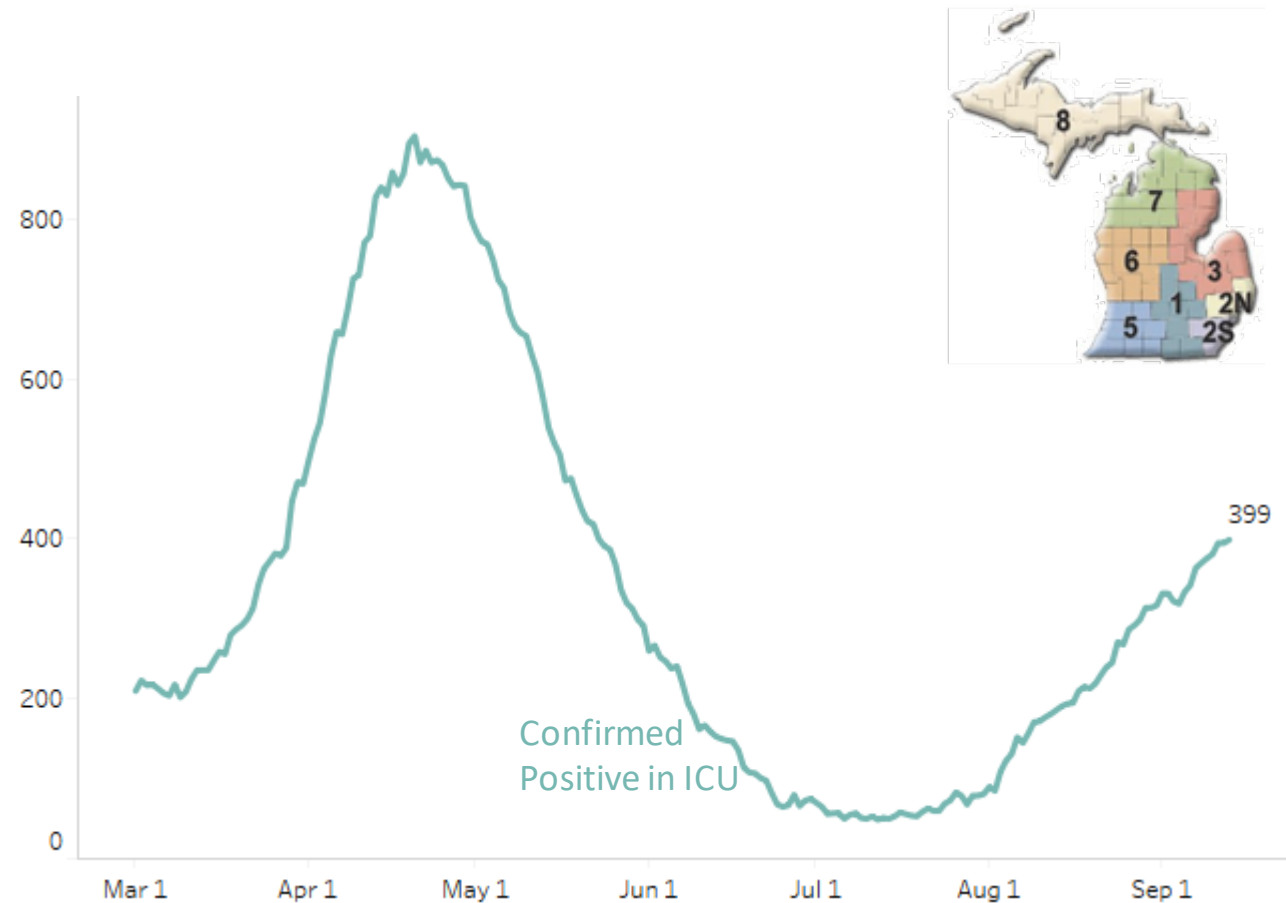
The fastest growth is in Region 2N, 2S and Region 8.

Region 2N, 3 and 6 have >150/M population hospitalized for COVID.

Region	COVID+ Hospitalizations (% Δ from last week)	COVID+ Hospitalizations / MM
Region 1	145 (7%)	134/M
Region 2N	342 (34%)	154/M
Region 2S	312 (24%)	140/M
Region 3	176 (5%)	155/M
Region 5	117 (13%)	123/M
Region 6	243 (13%)	166/M
Region 7	56 (0%)	112/M
Region 8	29 (32%)	93/M

# Statewide Hospitalization Trends: ICU COVID+ Census

Hospitalization Trends 3/1/2021 – 9/13/2021  
Confirmed Positive in ICUs



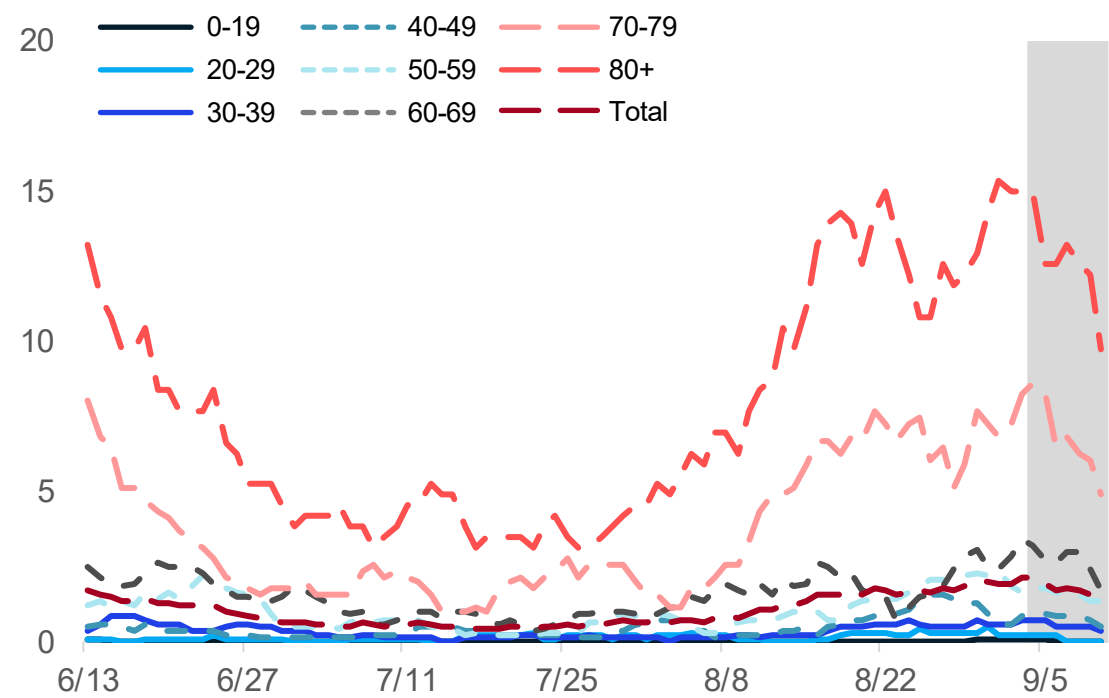
Overall, the census of COVID+ patients in ICUs has increased by 16% which is similar to last week's growth.

All regions except Region 7 have increasing ICU census, with Regions 1 and 3 at ICU occupancy over 85%. Region 1 and 6 have >20% of ICU beds occupied with COVID+ patients.

Region	Adult COVID+ in ICU (% Δ from last week)	Adult ICU Occupancy	% of Adult ICU beds COVID+
Region 1	41 (5%)	88%	24%
Region 2N	84 (24%)	75%	15%
Region 2S	91 (21%)	81%	13%
Region 3	47 (24%)	91%	14%
Region 5	33 (22%)	65%	18%
Region 6	66 (14%)	76%	28%
Region 7	25 (-7%)	74%	16%
Region 8	12 (20%)	69%	19%

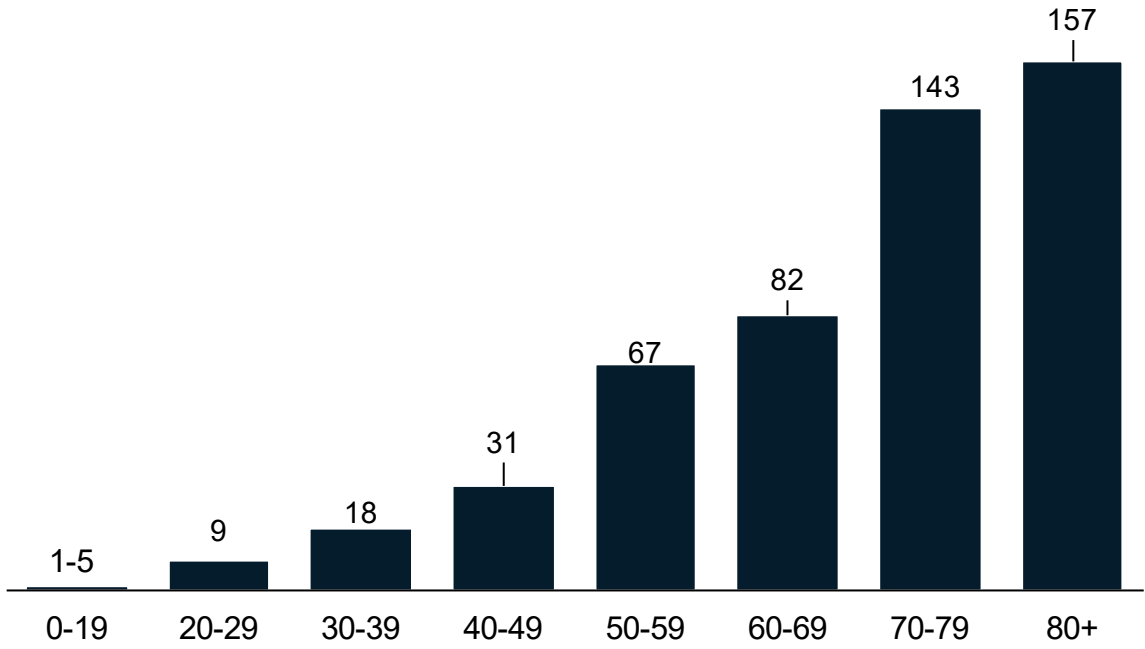
# Average and total new deaths, by age group

Daily confirmed and probable deaths per million by age group (7 day rolling average)



Total confirmed and probable deaths by age group (past 30 days, ending 9/6/2021)

- 25% of deaths below age sixty



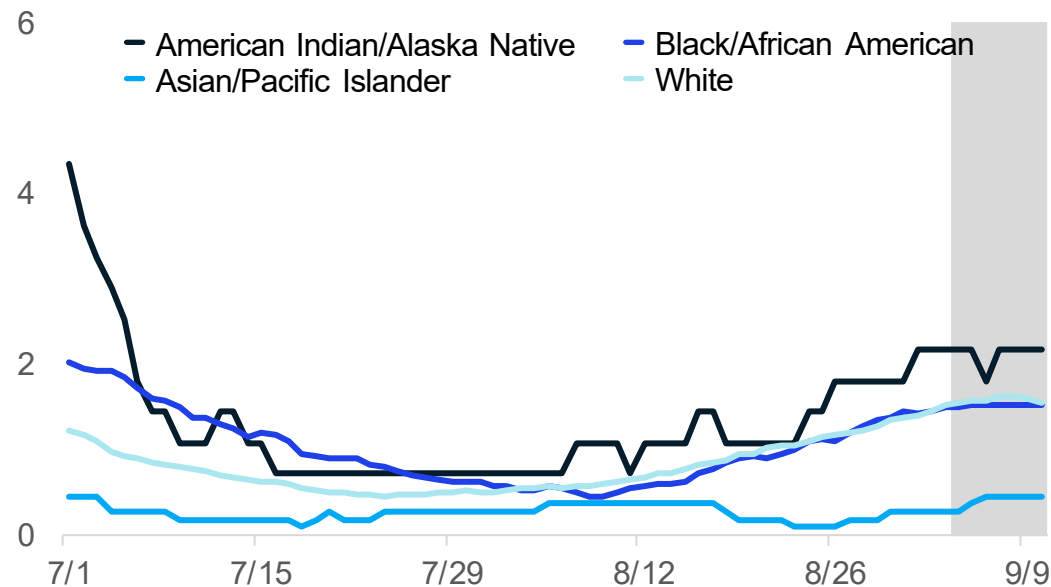
- Overall trends for daily average deaths are increasing since last week
- Through 9/6, the 7-day avg. death rate is more than 6.0 daily deaths per million people for those over the age of 70

Note: Death information sourced from MDHHS and reflects date of death of confirmed and probable cases.  
Source: MDHHS – Michigan Disease Surveillance System

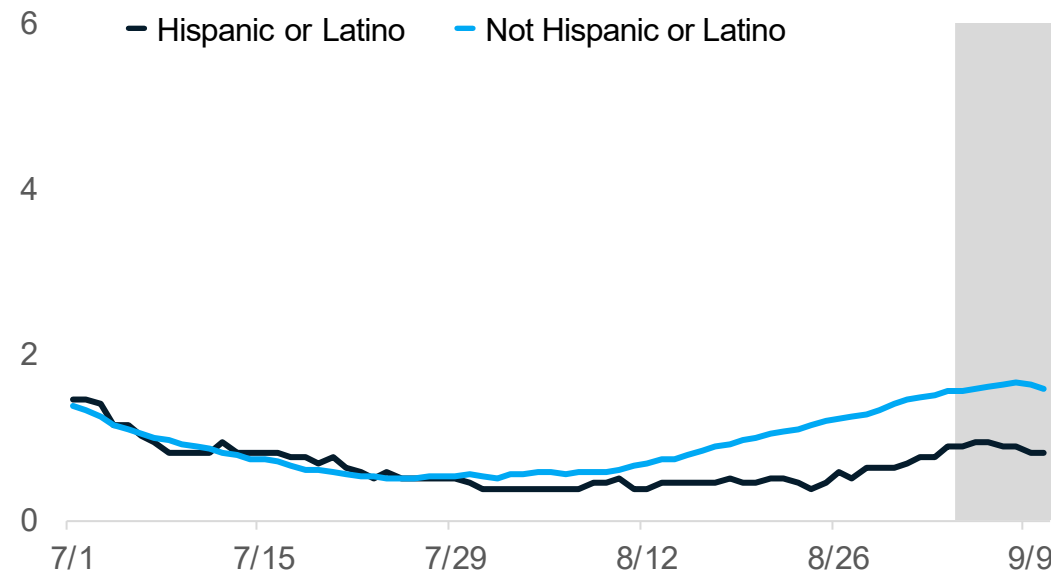


# 30-day rolling average daily deaths per million people by race and ethnicity

Average daily deaths per million people by race



Average daily deaths per million people by ethnicity



- Additional reviews of vital records death data were performed the weeks of 7/6 and 8/9 to search for race and ethnicity
- This review has resulted in an adjustment of deaths for American Indian and Alaskan Natives from previous weeks
- **Currently, American Indian/Alaskan Natives have the highest death rate**

Note: Death information sourced from MDHHS and reflects date of death of confirmed and probable cases.  
Source: MDHHS – Michigan Disease Surveillance System

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# COVID-19 Vaccination

## Administration (doses administered)

- 5,357 first doses administered each day (7-day rolling average\*)
- Most administered frequently by pharmacies, local health departments, and hospitals
- More than 50,000 third doses administered since third dose recommendation for immunocompromised individuals

## Coverage (people vaccinated)

5.1 million people in the state are fully vaccinated

83.1% of people aged 65 and older have completed the series (+0.2%)

55.9% of total population initiated (+0.4%)

- 67.2% (+0.5) of aged 18+ have had first dose of vaccine; 87.6% (+0.3) of aged 65+ have had first dose
- 5,119,223 people in Michigan have completed vaccination series (5,070,925 and 5,040,341 in last 2 weeks)
- Initiation highest among Asian, Native Hawaiian or Pacific Islander and American Indian/Alaskan Native individuals (MI COVID Vaccine Dashboard 9/14/21)
- Less than 1% of Vaccinated Individuals Later Tested Positive for COVID-19 (Number of cases who are fully vaccinated (n= 24,603)

\*[https://covid.cdc.gov/covid-data-tracker/#vaccination-trends\\_vacctrends-onedose-daily](https://covid.cdc.gov/covid-data-tracker/#vaccination-trends_vacctrends-onedose-daily)

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# Average daily doses administered declining (data through 9/14/2021)

13,167,470 doses delivered to providers and 10,352,589 doses administered\*

MI 7-day rolling average ending September 14<sup>th</sup>

- 9,011 total doses/day on average †
- 3,527 first doses/day on average †

Total primary series doses (between 9/5-9/11) were most frequently administered<sup>¶</sup> by:

Pharmacies (37.9K)

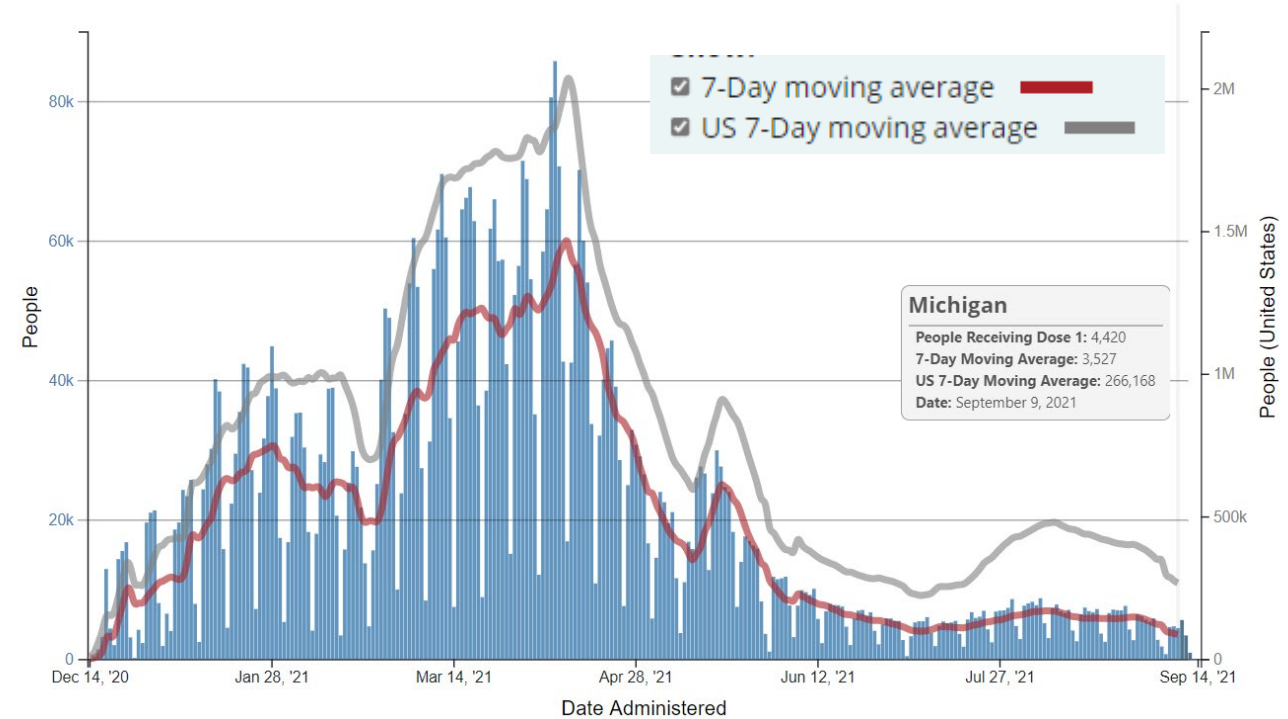
LHD (3.7K) and hospitals (3.7K)

Family practice (2.2K), FQHCs (1.8K), and Pediatric (885)

Third Doses

- 50,206 third doses administered to date

Daily Count of People Receiving Dose 1 Reported to CDC by Date Administered, Michigan



Source: \*[CDC COVID Data Tracker > Vaccinations in the US](#), † [CDC COVID Data Tracker > Vaccination Trends](#), ¶ [MCIR COVID-19 Vaccine Dashboard](#)

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# Over 5 Million Michiganders fully vaccinated and 51.3% of total population fully vaccinated

5.12 million people in the state are fully vaccinated\*

83.1% of people aged 65 and older have completed the series (+0.2%)\*

55.9% of total population initiated (+0.4%)\*

50,206 additional doses†

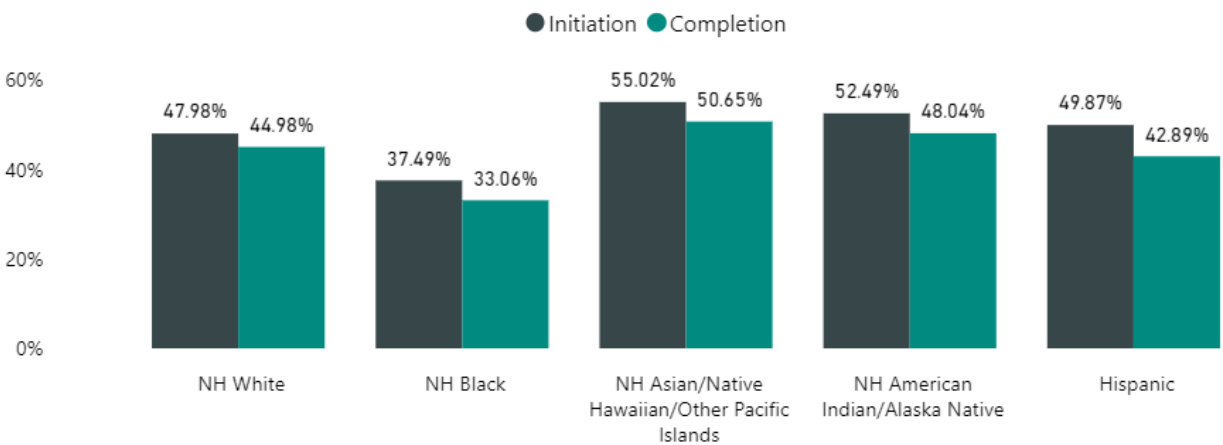
Race/Ethnicity† for those 12 years and older:

- Initiation coverage highest among those of Non-Hispanic (NH) Asian, Native Hawaiian or Pacific Islander Race (55.0%), then NH American Indian (52.5%), NH White (48.0%), NH Black or African American Races (37.5%).
- Initiation is at 49.9% for those of Hispanic ethnicity
- Completion follows the same pattern
- 19.5% data missing or unknown

## Vaccination Coverage in Michigan as of 9/14/21

Age Group	% At Least One Dose	% Fully Vaccinated	Number Fully Vaccinated
Total Population	55.9%	<b>51.3%</b>	5,119,223
≥ 12 years	65.0%	59.6%	5,119,111
≥ 18 years	67.2%	61.8%	4,846,788
≥ 65 years	87.6%	83.1%	1,467,812

Coverage by Race\*



Source: \*[CDC COVID Data Tracker > Vaccinations in the US](#), † [MCIR COVID-19 Vaccine Dashboard](#)



# Potential COVID-19 Vaccination Breakthrough Cases

Michigan part of CDC's nationwide investigation ([COVID-19 Breakthrough Case Investigations and Reporting | CDC](#))

## Michigan Data (1/1/21 through 9/7/21):

- **24,603 cases met criteria based on a positive test 14 or more days after being fully vaccinated**
- **Less than 1% of people who were fully vaccinated met this case definition**
  - **Includes 330 deaths (291 in persons ages 65 years or older)**
  - **1,043 cases were hospitalized**
- Vaccine breakthrough cases are expected. COVID-19 vaccines are effective and are a critical tool to bring the pandemic under control. However, no vaccines are 100% effective at preventing illness. Some fully vaccinated people will get sick, and some will even be hospitalized or die from COVID-19. However, there is evidence that vaccination may make illness less severe for those who are vaccinated and still get sick. The risk of infection, hospitalization, and death are all much lower in vaccinated compared to unvaccinated people.
- More than 173 million people in the United States have been fully vaccinated as of August 30, 2021. Like with other vaccines, vaccine breakthrough cases will occur, even though the vaccines are working as expected. Asymptomatic infections among vaccinated people will also occur.
- Current data suggest that COVID-19 vaccines authorized for use in the United States offer protection against most SARS-CoV-2 variants circulating in the United States. However, variants will cause some vaccine breakthrough cases.

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# Update on breakthrough cases

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# Cumulative COVID-19 Cases by Vaccination Status, Michigan, Jan 15 – Sep 7

Fully Vaccinated People (4,756,092)		
Cases	Hospitalization	Deaths
Percent of Cases In People Not Fully Vaccinated (434,438 / 459,041) <b>94.6%</b>	Percent of Hospitalizations In People Not Fully Vaccinated (12,209 / 13,252) <b>92.1%</b>	Percent of Deaths In People Not Fully Vaccinated (4,984 / 5,314) <b>93.8%</b>
<b>434,438</b> Total Cases Not Fully Vaccinated	<b>12,209</b> Total Hospitalized Not Fully Vaccinated	<b>4,984</b> Total Deaths Not Fully Vaccinated
Total Breakthrough Cases <b>24,603</b>	Total Breakthrough Hospitalizations <b>1,043</b>	Total Breakthrough Deaths <b>330</b>
<b>0.517%</b> Percent of Fully Vaccinated People who Developed COVID-19 (24,603 / 4,756,092)	<b>0.022%</b> Percent of Fully Vaccinated People Who Were Hospitalized for COVID-19 (1,043 / 4,756,092)	<b>0.007%</b> Percent of Fully Vaccinated People Who Died of COVID-19 (330 / 4,756,092)
<b>5.4%</b> Percent of Cases Who Were Fully Vaccinated (24,603 / 459,041)	<b>7.9%</b> Percent of Hospitalizations Who Were Fully Vaccinated (1,043 / 13,252)	<b>6.2%</b> Percent of Deaths Who Were Fully Vaccinated (330 / 5,314)
Total Cases: <b>459,041</b>	Total Hospitalizations: <b>13,252</b>	Total Deaths: <b>5,314</b>

Michigan Disease Surveillance System may underestimate the frequency of COVID-19 hospitalizations:

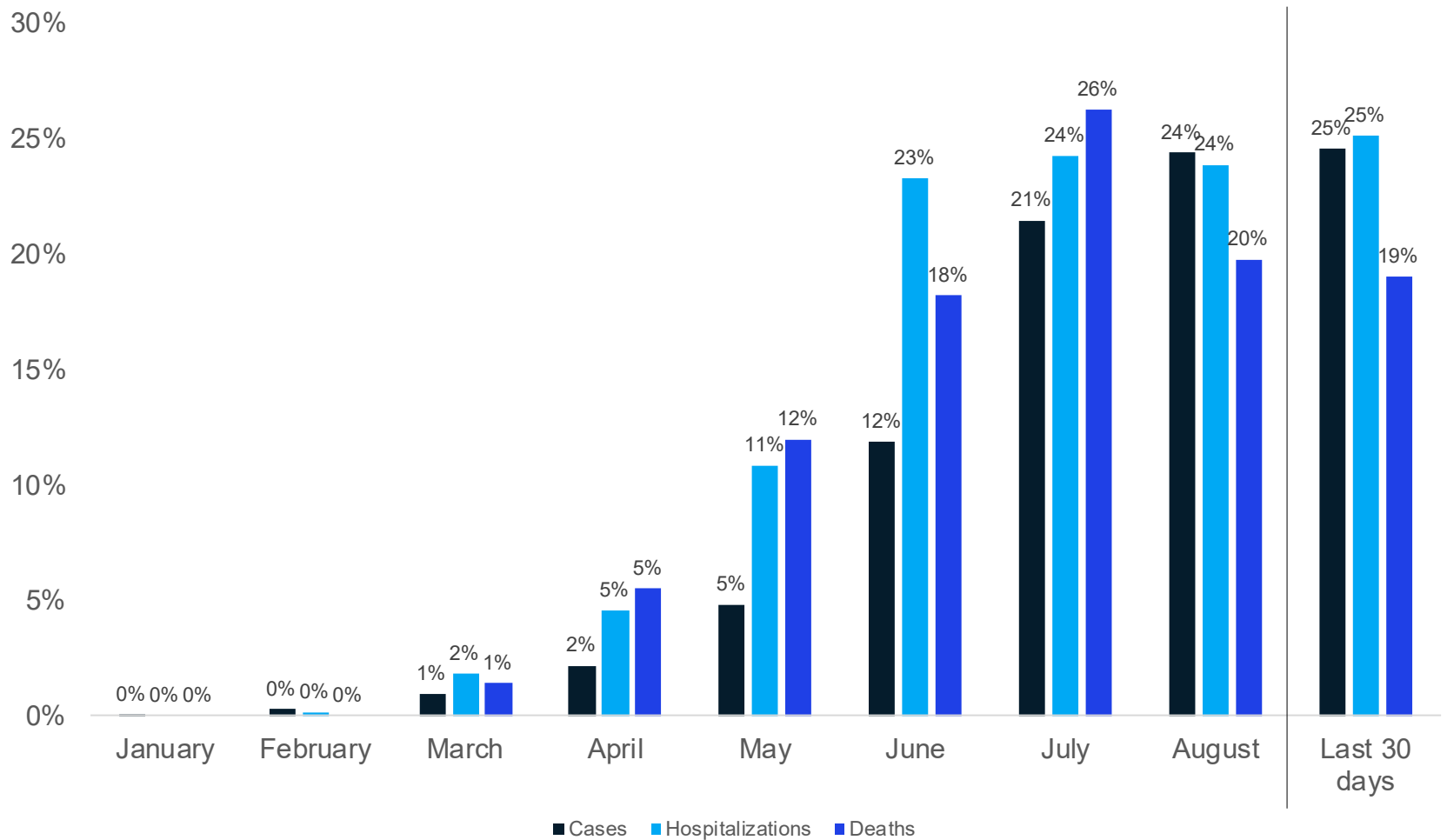
- Case investigation and follow-up is more difficult for individuals who get vaccinated (e.g., they are too ill to speak to investigators, don't answer their phone, or otherwise).
- These hospitalizations include individuals who are hospitalized for issues other than COVID19 (the same as breakthrough COVID-19).
- Individuals who get hospitalization will lag after infection and may occur after case investigation.



# Trends in Breakthrough Cases, Hospitalizations, and Deaths

- 501.3% of the population is fully vaccinated yet only account for ~20-25% of cases, hospitalizations, and deaths
- As the fully vaccinated population has increased, so have the percent of breakthrough incidents; but breakthrough burden remains lower

In the last 30 days (Aug 9 – Sep 7), 11,940 (25%) of 48,664 cases, 275 (25%) of 1,095 hospitalizations, and 35 (19%) of 184 deaths were among fully vaccinated individuals

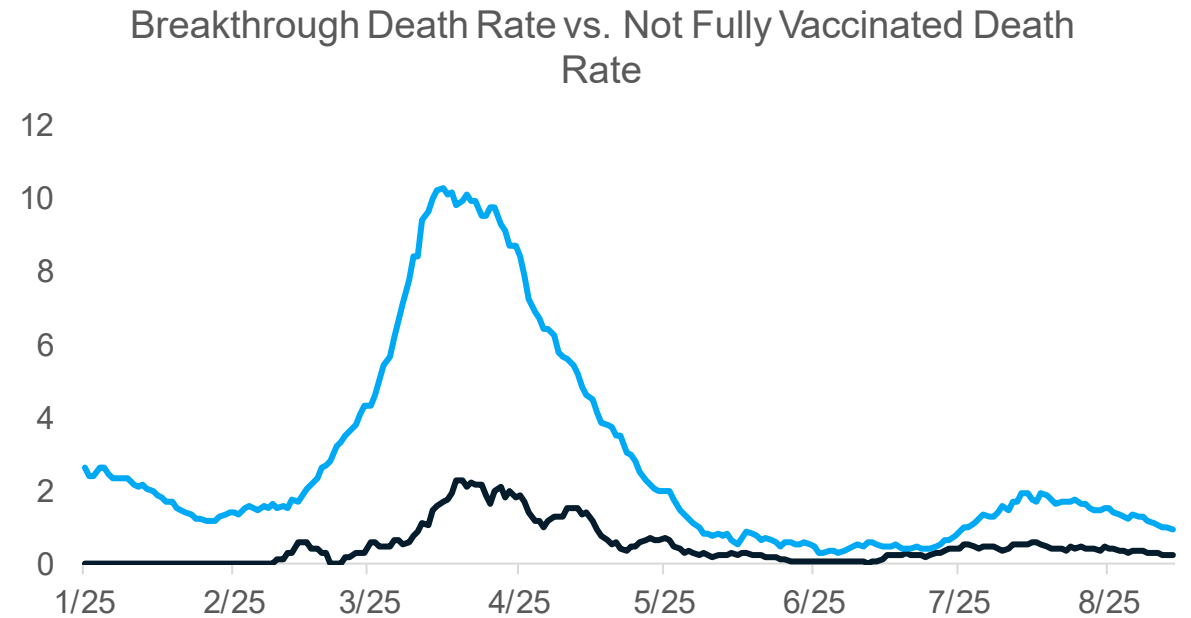
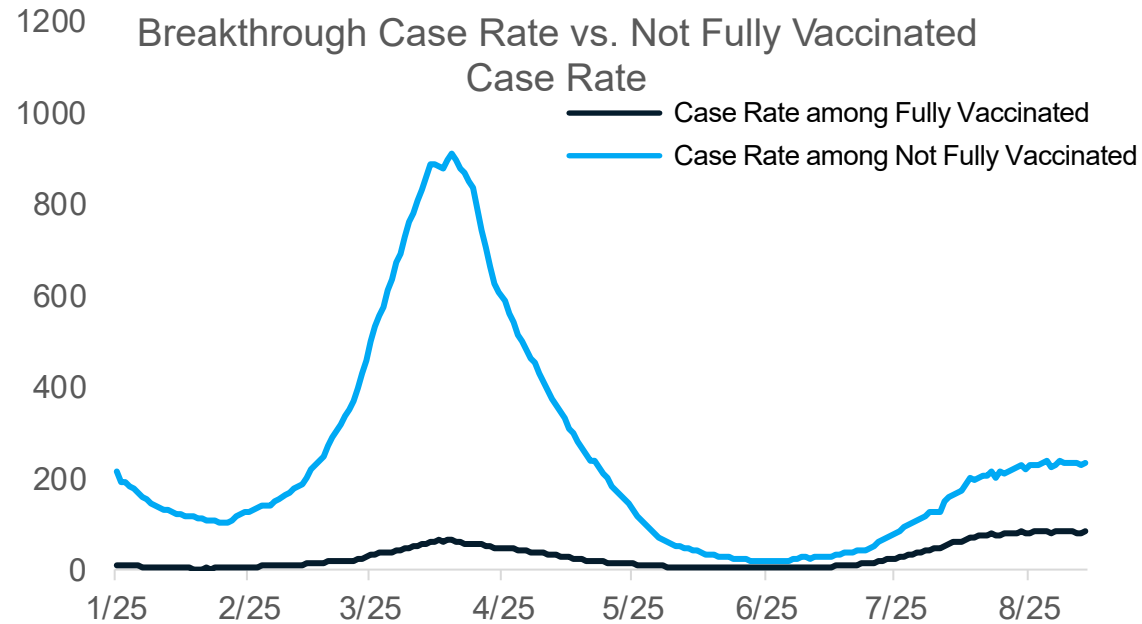


Michigan Disease Surveillance System may underestimate the frequency of COVID-19 hospitalizations:

- Case investigation and follow-up is more difficult for individuals who get vaccinated (e.g., they are too ill to speak to investigators, don't answer their phone, or otherwise).
- These hospitalizations include individuals who are hospitalized for issues other than COVID19 (the same as breakthrough COVID-19).
- Individuals who get hospitalization will lag after infection and may occur after case investigation.



# COVID-19 Vaccination Breakthrough Cases and Deaths



- Trends over time show that both case and death rates among the Fully Vaccinated are lower than the Not Fully vaccinated rates in Michigan
- The *proportion* of breakthrough cases and deaths among all cases and deaths has shown some increases as more people become fully vaccinated
  - However, the risk of infection and death remains significantly lower among the fully vaccinated

# Other Public Health Indicators

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# Other Public Health Indicators

## Disparities in influenza vaccine coverage by race – 2021

- Data for influenza vaccination coverage for children, adolescents, and adults in 2020-2021 season as compared to 2019-2020 season.
  - The timeline for the baseline influenza season considered in this report is July 1st, 2019 - June 30th, 2020 (**2019-2020 season**)
  - The timeline for the comparison influenza season considered in this report is July 1st, 2020 - June 30th, 2021 (**2020-2021 season**)
- There was an **overall increase** in flu vaccination coverage in 2020-2021 as compared to 2019-2020 and for all the races
- Influenza vaccination coverage rates were **disproportionately lower in Black individuals** as compared to those of other races in both 2019-2020 and 2020-2021
  - This was seen among all age groups
- There was a **decrease** in flu vaccination coverage rates for **children aged 6 months through 8 years** in 2020-2021

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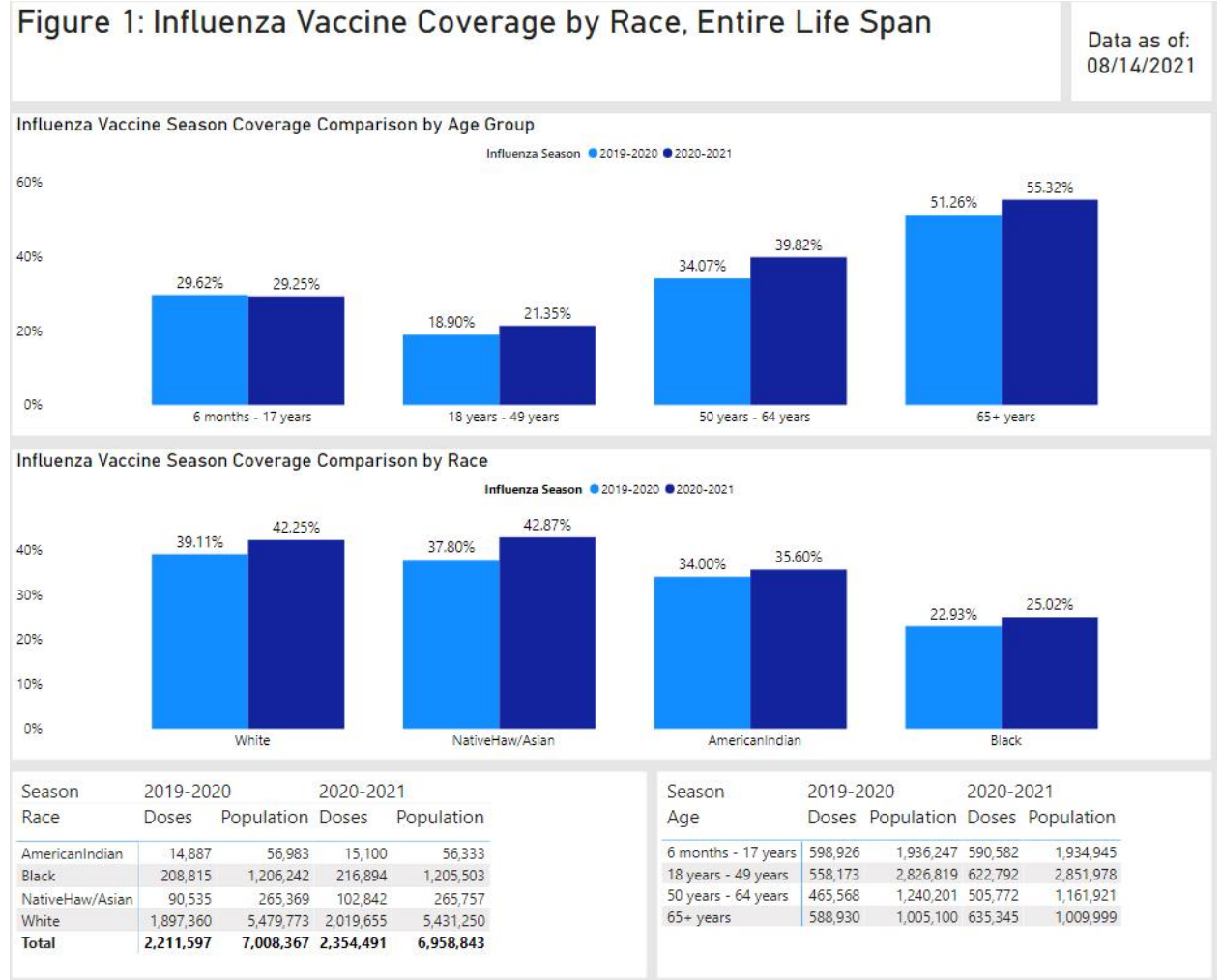
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# Influenza Vaccination Coverage for 2020-2021 was higher than the 2019-2021 (all ages)

- Influenza vaccination coverage for children, adolescents, and adults in 2020-2021 influenza season and 2019-2020 influenza season
- There was an increase in flu vaccination coverage in 2020-21 as compared to 2019-20 for **individuals of all racial groups and for most age groups**
  - Overall increase in coverage across each races group is in line with a statewide increase of 7%
  - Coverage rates were lower for Black individuals as compared to the other racial groups



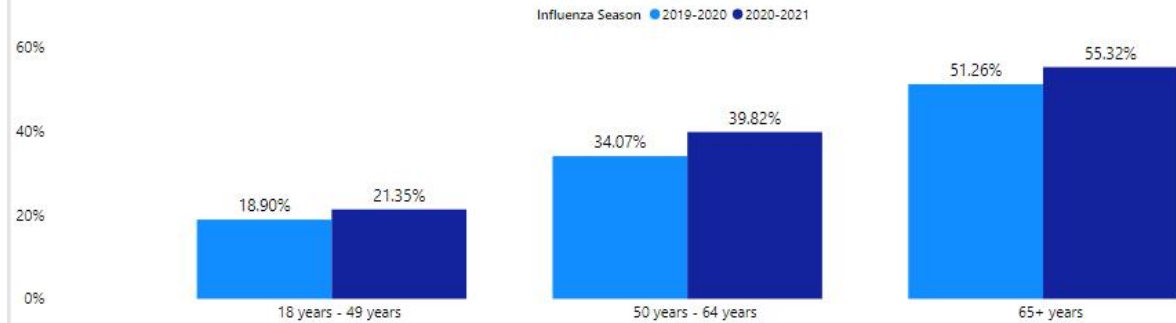
# Influenza vaccine coverage increased for adults during 2020-2021 flu year

- There was an increase in **adult** flu vaccination coverage in 2020-2021 as compared to 2019-2020 **overall and for individuals of all racial and age groups**
- Those 65 and older and those who were white had the highest vaccination coverage among adults
- Adults who were under 50 and Black adults had the lowest flu vaccination coverage

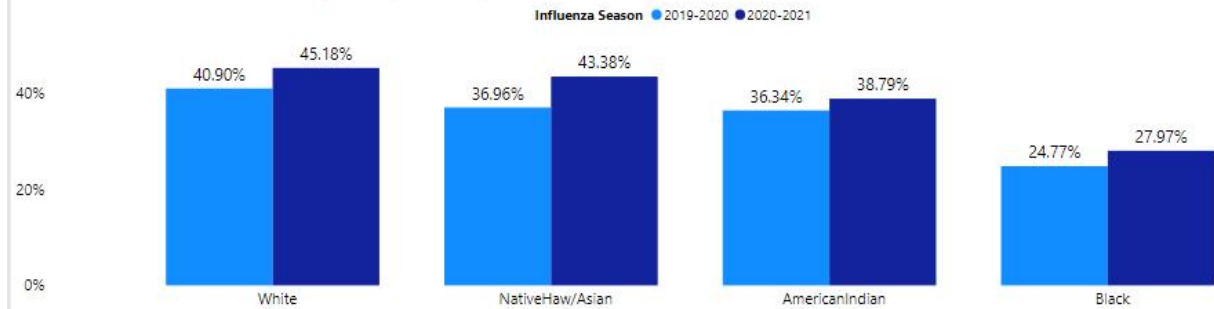
Figure 4: Influenza Vaccine Coverage by Race, Adult Age Groups

Data as of:  
08/14/2021

Influenza Vaccine Season Coverage Comparison by Age Group



Influenza Vaccine Season Coverage Comparison by Race



Season	2019-2020		2020-2021	
	Doses	Population	Doses	Population
AmericanIndian	11,502	44,436	11,975	44,327
Black	144,127	834,951	156,980	834,428
NativeHaw/Asian	48,318	160,648	58,948	159,650
White	1,408,724	4,032,085	1,536,006	3,985,493
Total	1,612,671	5,072,120	1,763,909	5,023,898

Season	2019-2020		2020-2021	
	Doses	Population	Doses	Population
18 years - 49 years	558,173	2,826,819	622,792	2,851,978
50 years - 64 years	465,568	1,240,201	505,772	1,161,921
65+ years	588,930	1,005,100	635,345	1,009,999

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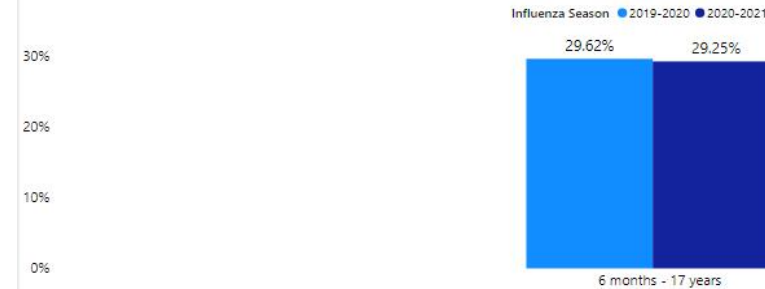
# Influenza vaccine coverage remained the same for all children and adolescents (6 months – 17 years) for the 2020-2021 flu year

- There was little shift in flu vaccination coverage for children and adolescents (6 months – 17 years) in 2020-2021 as compared to 2019-2020 **overall and for all racial groups**
  - On average, shifts between the two years were <1%
  - Coverage rates were highest for individuals of Native Hawaiian/Asian race and lowest for individuals of Black race

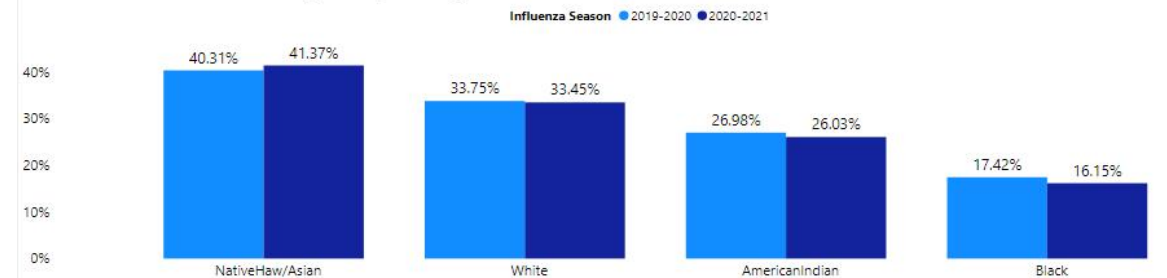
Figure 3: Influenza Vaccine Coverage by Race, Child and Adolescent Age Group

Data as of:  
08/14/2021

Influenza Vaccine Season Coverage Comparison by Age Group



Influenza Vaccine Season Coverage Comparison by Race



Season Race	2019-2020		2020-2021	
	Doses	Population	Doses	Population
AmericanIndian	3,385	12,547	3,125	12,006
Black	64,688	371,291	59,914	371,075
NativeHaw/Asian	42,217	104,721	43,894	106,107
White	488,636	1,447,688	483,649	1,445,757
Total	598,926	1,936,247	590,582	1,934,945

Season Age	2019-2020		2020-2021	
	Doses	Population	Doses	Population
6 months - 17 years	598,926	1,936,247	590,582	1,934,945

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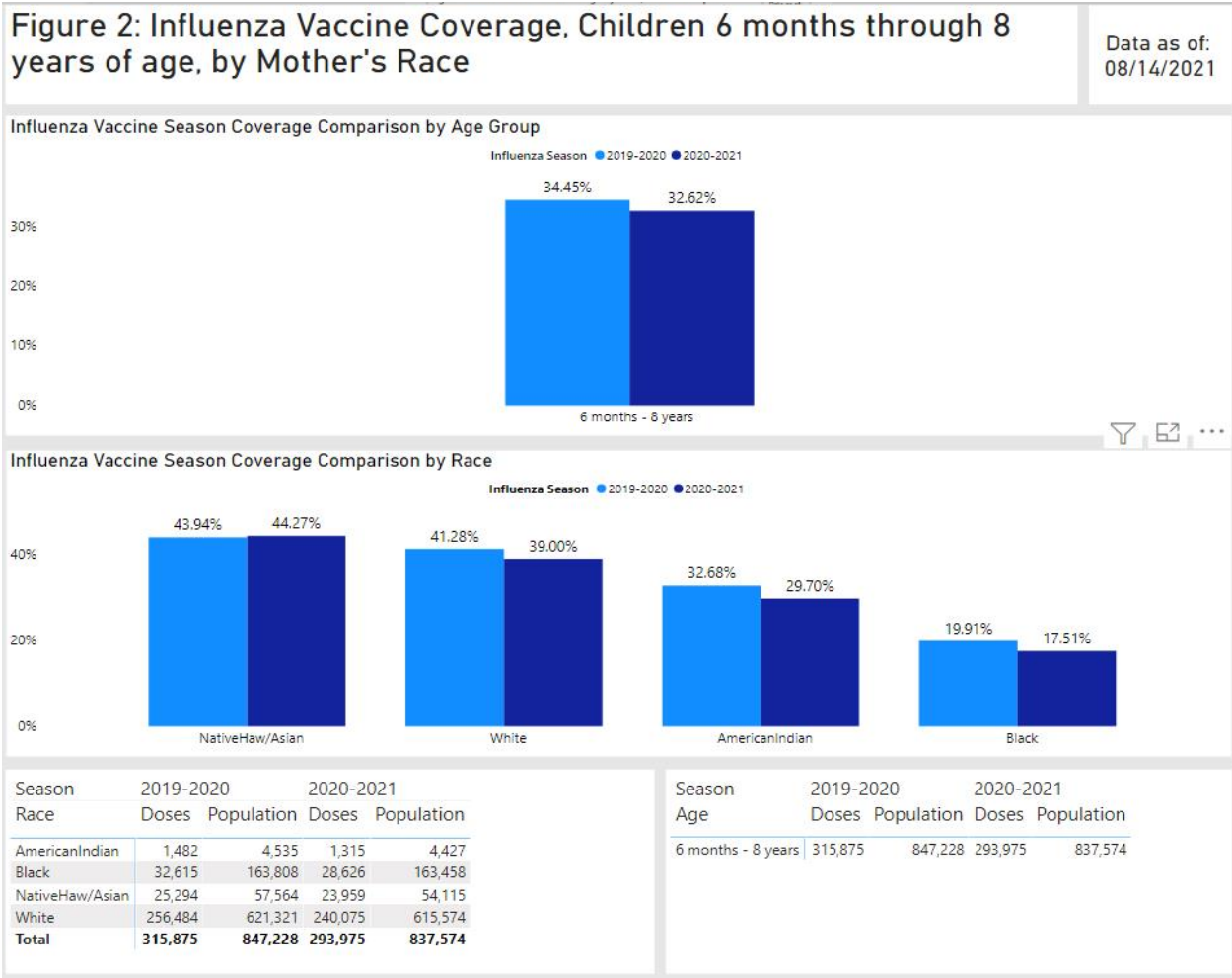
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# Influenza vaccine coverage decreased for children 6 months through 8 years for the 2020-2021 flu year



- Flu vaccination coverage declined in 2020-2021 as compared to 2019-2020 **for children aged 6 months to 8 years overall and across most racial groups**
  - Overall, influenza vaccine coverage fell ~2%
  - Coverage rates were highest for individuals of Native Hawaiian/Asian race, and increased slightly from 43.9% to 44.3% for this group
  - Coverage rates were lowest in children of Black race as compared to children in other racial groups

# Science Round Up

## Deeper look at trends: What happening in other states and comparison to past surges

- Average daily incidence per 100,000 cases in Michigan is currently lower than other states, including other Midwestern states, experiencing a surge in delta cases
- Ridge regression model projects continued increases for Michigan although **case trends may be slowing**
- CDC models project **continued increases in hospitalizations and deaths, although cases projected to plateau**

## What do we know about COVID in children and schools

- Children in Michigan can get infected with SARS-CoV-2 and spread the virus to others in the classroom setting
- The proportion of kids getting sick with COVID-19 is increasing
- Missed in person school negatively impacts children and can occur large uncontrolled outbreaks within schools
- Children can experience severe health outcomes from COVID-19 including MIS-C and Hospitalization
- Many of those who experience MIS-C in Michigan are admitted to intensive care, school age, and are Black/African American

## Importance of Continue Mitigation

- Correctly and consistently implementing layered prevention strategies are the best way to prevent uncontrolled spread of SARS-CoV-2
- 43% of Michigan school districts have mandatory mask policy for students in all K-12 grades
- School districts with mandatory mask policies for all grades K-12 cover 60% of all students in Michigan
- Case rates among children are higher in counties where school districts do not have mask policies

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# Deeper look at trends: What is happening in other states and COVID forecasts for Michigan

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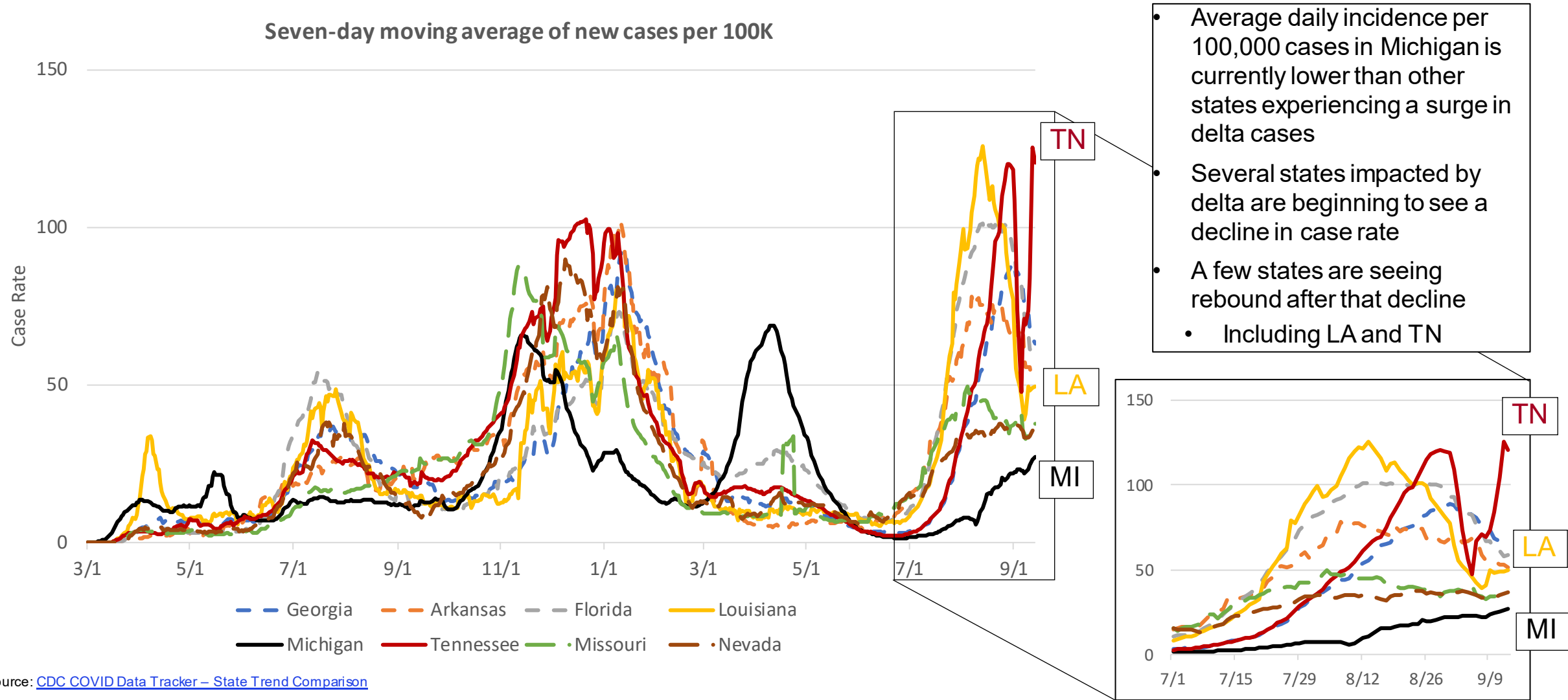
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# COVID-19 Case Rates: States with High Delta Comparison

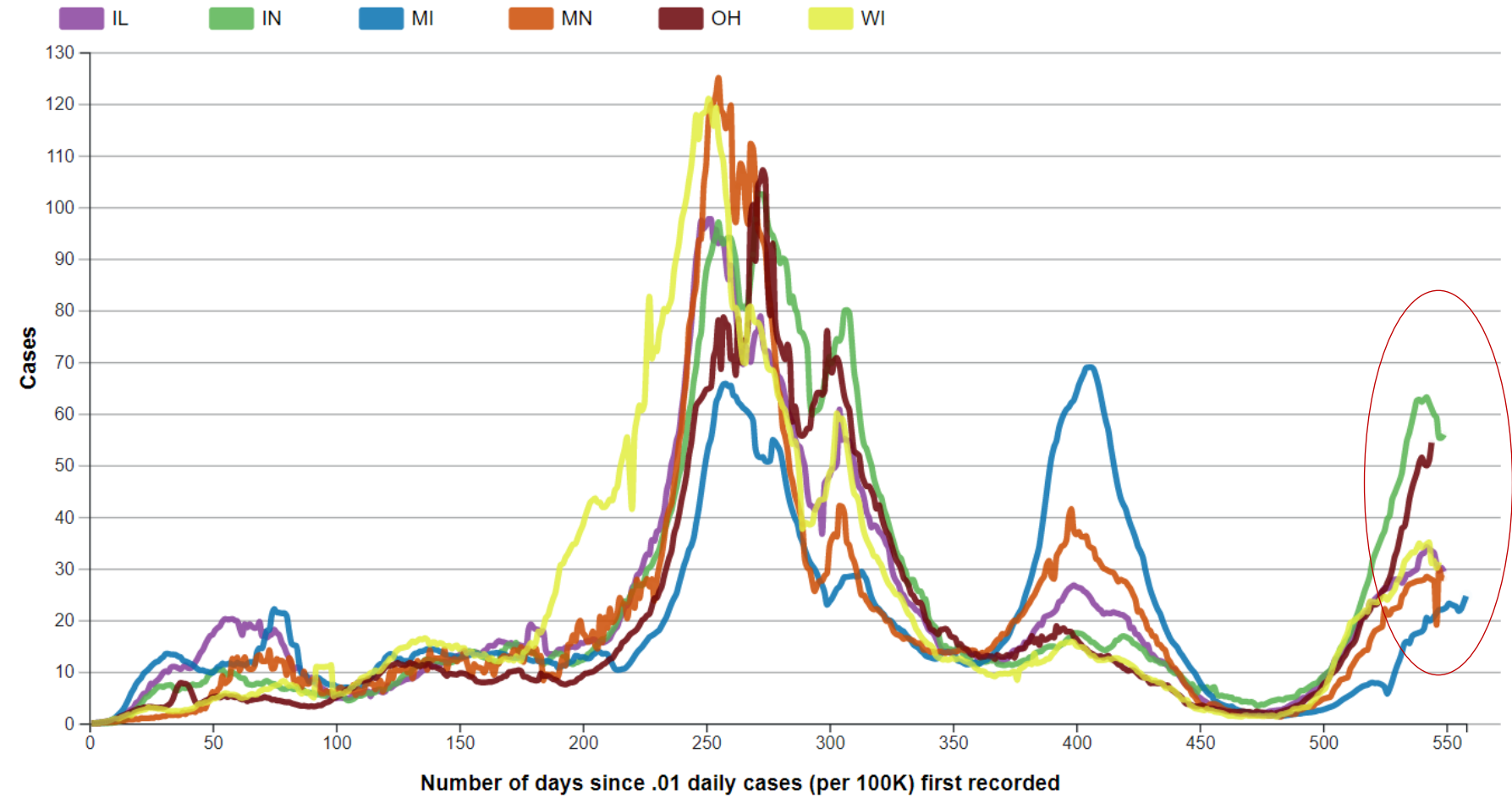


# COVID-19 Case Rates: Midwest Comparison

New cases of Covid-19, reported to CDC, in IL, IN, MI, MN, OH, and WI

Seven-day moving average of new cases (per 100K), by number of days since .01 average daily cases (per 100K) first recorded.

- Average daily incidence per 100,000 cases in Michigan is currently lower than other Midwestern states experiencing a surge in delta cases



Source: [CDC COVID Data Tracker – State Trend Comparison](#)

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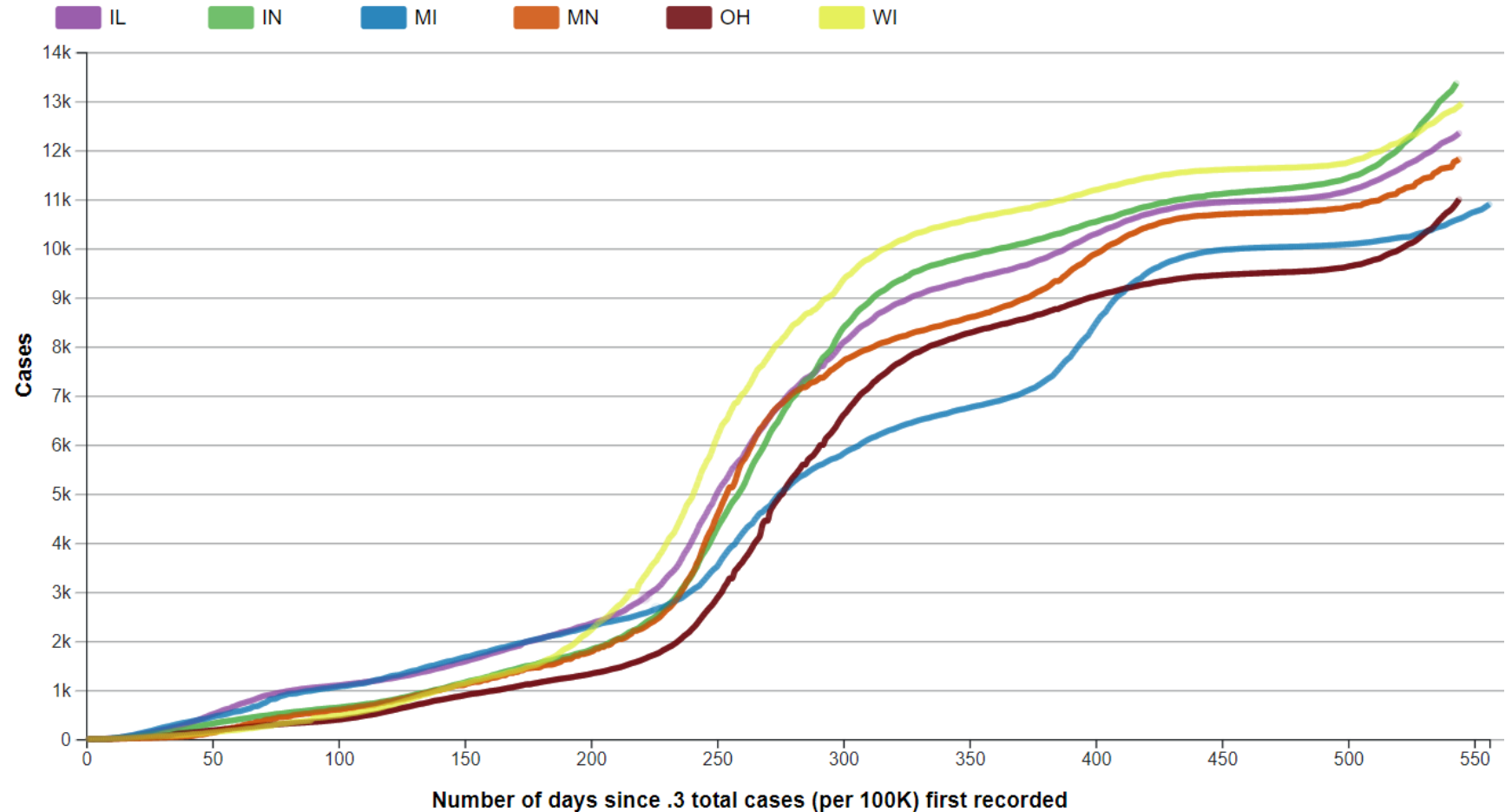
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# COVID-19 Case Rates: Midwest Comparison (Cumulative Numbers)

Cumulative cases of Covid-19, reported to CDC, in IL, IN, MI, MN, OH, and WI

Cumulative cases (per 100K), by number of days since .3 total cases (per 100K) first recorded.

- Average daily incidence per 100,000 cases in Michigan is currently lower than other Midwestern states experiencing a surge in delta cases
- This pattern is reflected in the cumulative case numbers as well



Source: [CDC COVID Data Tracker – State Trend Comparison](#)

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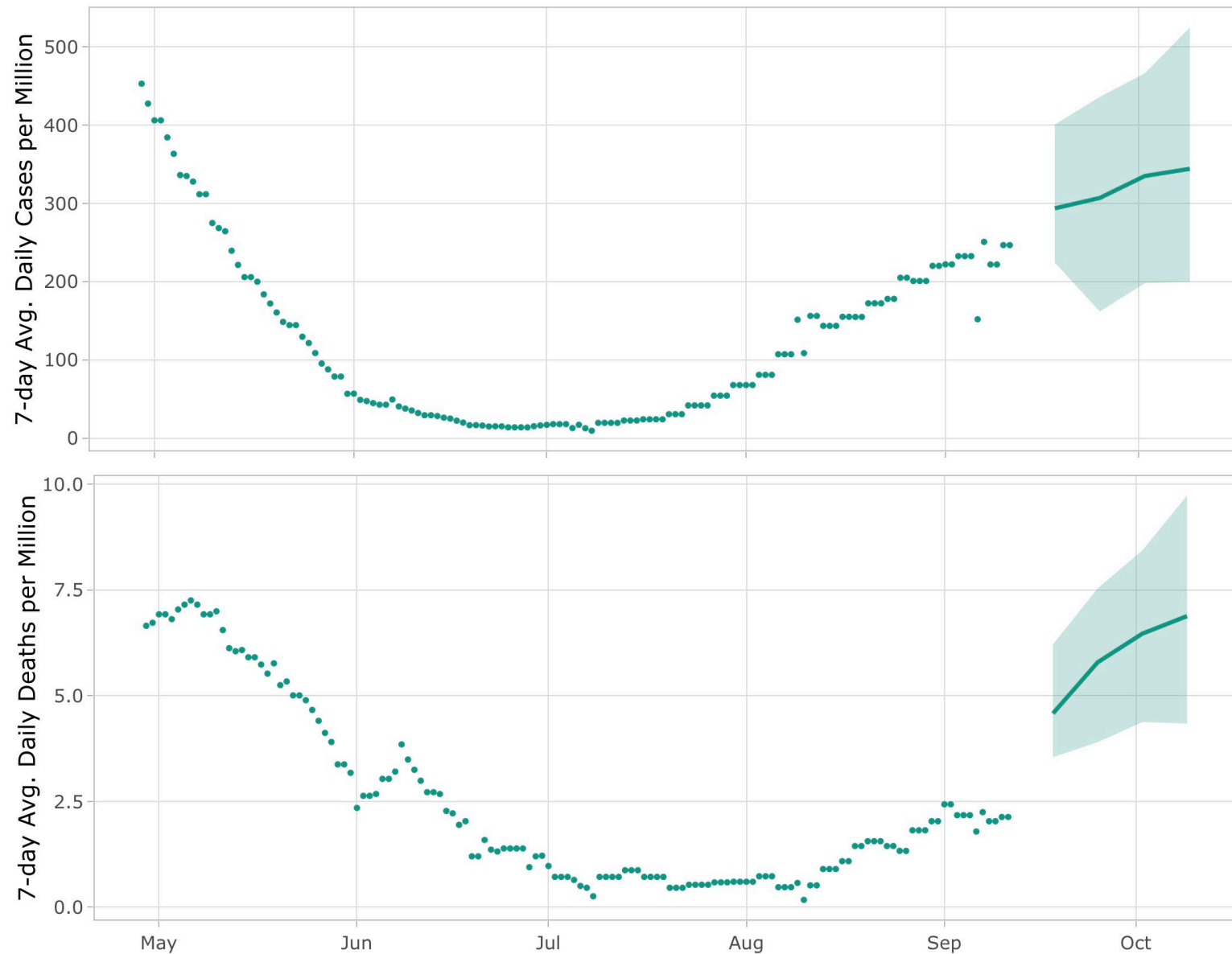
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# Ridge regression model projects continued increases for Michigan

- Model projects slowing increase in cases and continued increase in deaths
- Uncertainty range includes potential for sustained or slowed growth
- Cases and deaths are also projected to continue increasing across the Midwest (not shown)
- Line is the ridge regression model projection, and the shaded region represents the 95% confidence region (2.5% and 97.5% quantiles).
- Projections are based on previous data on cases, hospitalizations, and deaths, as well as data on mobility and vaccinations.
- Cases are plotted by report date.
- For full projections, see [dataepi.org](https://dataepi.org)

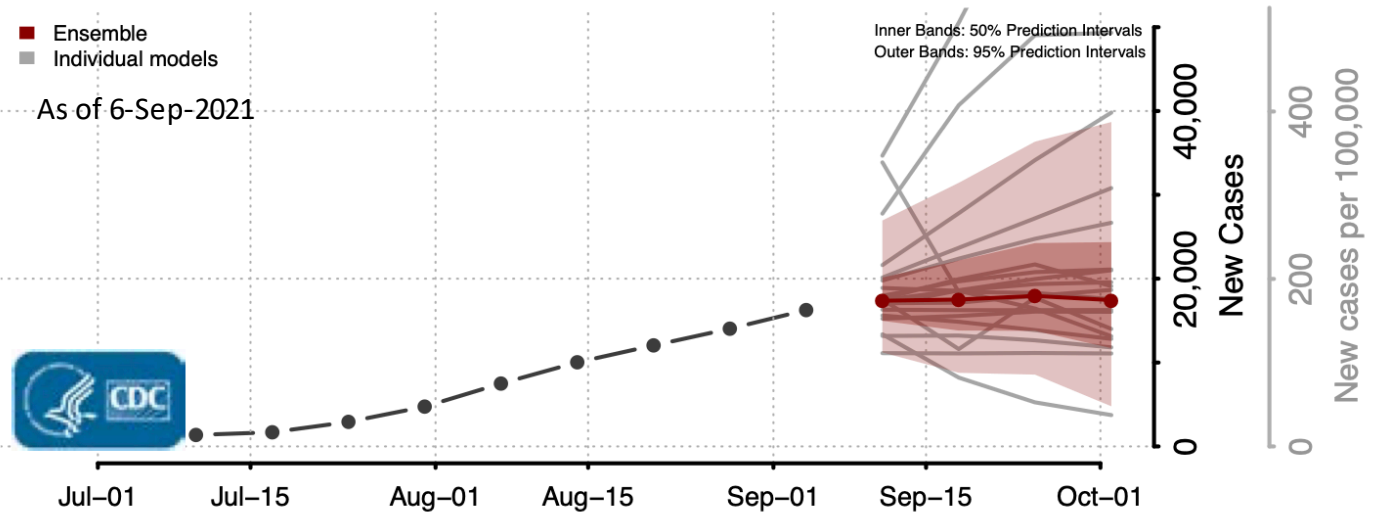
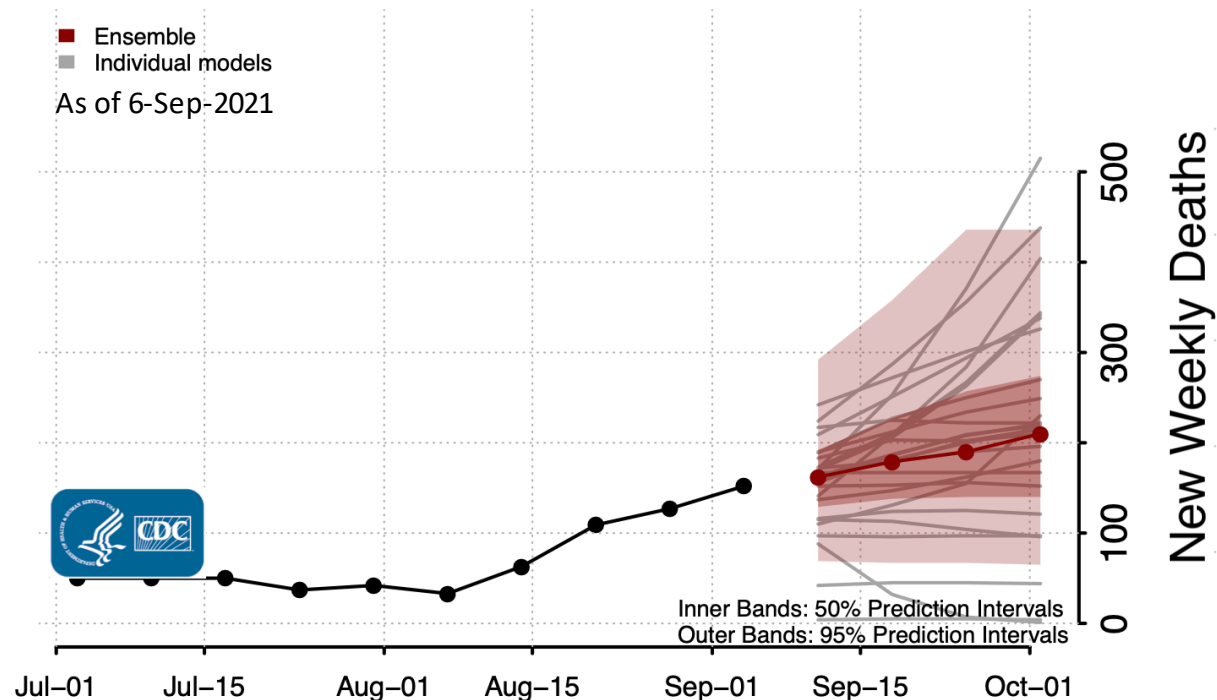
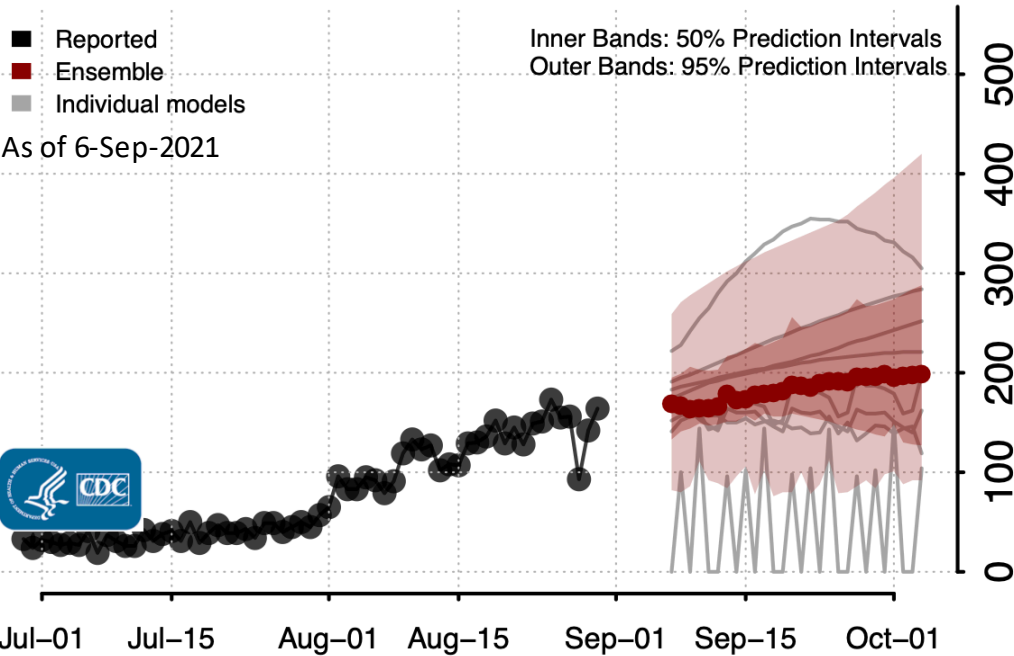


Sources: Data from MDHHS/JHU,  
[UM Ridge Regression Model](#)





# CDC models project continued increases in hospitalizations and deaths for Michigan, while cases are predicted to plateau



Data Sources: [CDC mathematical model forecasting](#), [CovidComplete Data Center](#) model forecast evaluations. Individual models shown as grey lines, ensemble shown in red

# What do we know about COVID-19 impact on Michigan schools

DRAFT

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Spread

Severity

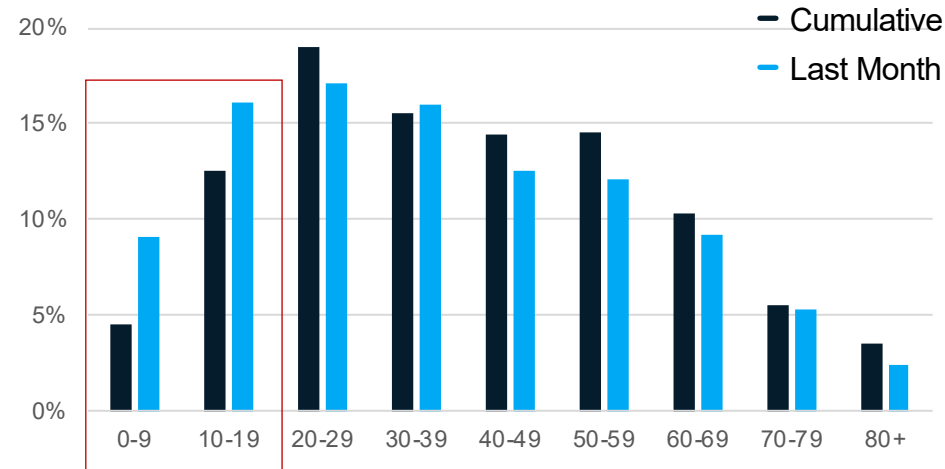
Public Health  
Response

Other  
Indicators

Science  
Round-up

# SARS-CoV-2 can Negatively Impact Children Directly and Indirectly

- Children can get infected with SARS-CoV-2 and the proportion of kids getting sick with COVID-19 is increasing



- The proportion of cases among 0-9 in the last 30 days is double what it's been for the entire pandemic in Michigan
- 10-19-year-olds also seeing a larger proportion of cases compared to older age groups in Michigan

- Children can transmit the virus to others and can be sources for outbreaks



A school outbreak consists of two or more COVID-19 cases (e.g., students, teachers, staff) who were exposed in a school setting and whose infection cannot be attributed to another setting (e.g., home, retail, etc.)

Sources: Case data: MDSS [18 mid-Michigan schools experiencing COVID-19 outbreaks](#); [3 new COVID-19 school outbreaks reported in Oakland County; 12 cases confirmed](#)

National Comparison

Spread


Public Health  
Response

Other  
Indicators

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Round-up

# SARS-CoV-2 can Negatively Impact Children Directly and Indirectly

- Missed in person school negatively impacts children and can occur large uncontrolled outbreaks within schools
  - **28 Schools in Michigan reported with 30 classrooms or entire grades in quarantine**

Baldwin Community Schools Cancels For  
Third Time Since Starting August 11th 

- Children can experience severe health outcomes from COVID-19 including MIS-C, Hospitalization, and Death
  - A JAMA study reported MIS-C incidence was 5.1 persons per 1,000,000 person-months and 316 persons per 1,000,000 SARS-CoV-2 infections in persons younger than 21 years
  - Incidence was higher among Black, Hispanic or Latino, and Asian or Pacific Islander persons compared with White persons and in younger persons compared with older persons

Sources: [Verlenden JV, Pampati S, Rasberry CN, et al. Association of Children's Mode of School Instruction with Child and Parent Experiences and Well-Being During the COVID-19 Pandemic — COVID Experiences Survey, United States, October 8–November 13, 2020. MMWR Morb Mortal Wkly Rep 2021;70](#); [Payne AB, et al. Incidence of Multisystem Inflammatory Syndrome in Children Among US Persons Infected With SARS-CoV-2. JAMA Netw Open. 2021;4\(6\)](#); [Baldwin Community Schools](#)

National Comparison

Spread

Public Health  
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# SARS-CoV-2 can Negatively Impact Children Directly and Indirectly

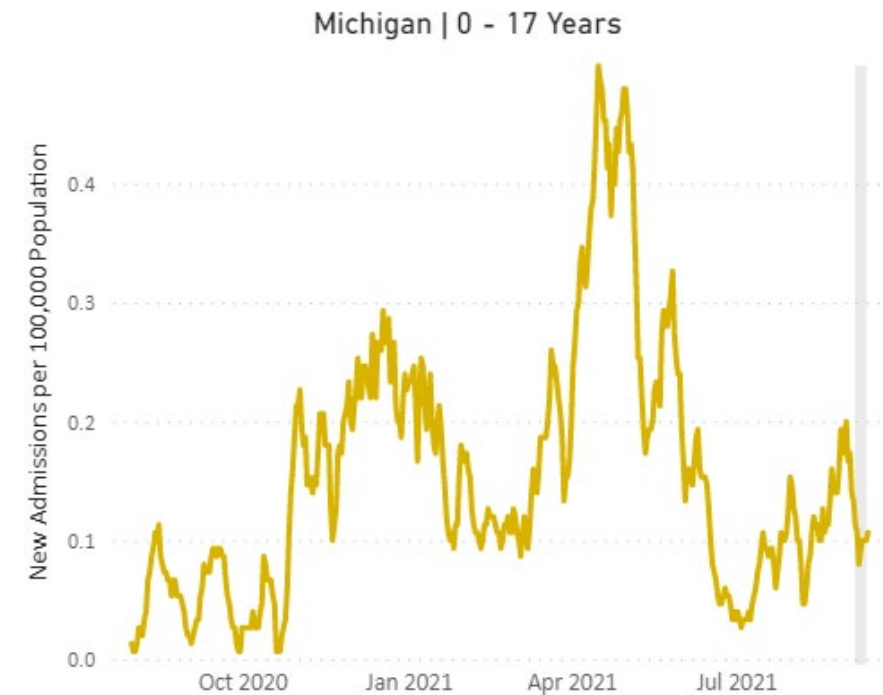
- Children can experience severe health outcomes from COVID-19 including MIS-C and Hospitalization
  - Hospitalizations among children nationwide is higher than it's ever been\*
  - In Michigan, hospitalizations for 0-17 years are not at all time highs but are generally increasing since July

United States Hospital Admissions | 0 -17 years



Note: Gray bar indicates lag period where data may be updated

Michigan Hospital Admissions | 0 -17 years



Sources: \*[CDC COVID Data Tracker > New Hospital Admissions](#); † [COVIDNET](#)

National Comparison

Spread

Public Health  
Response

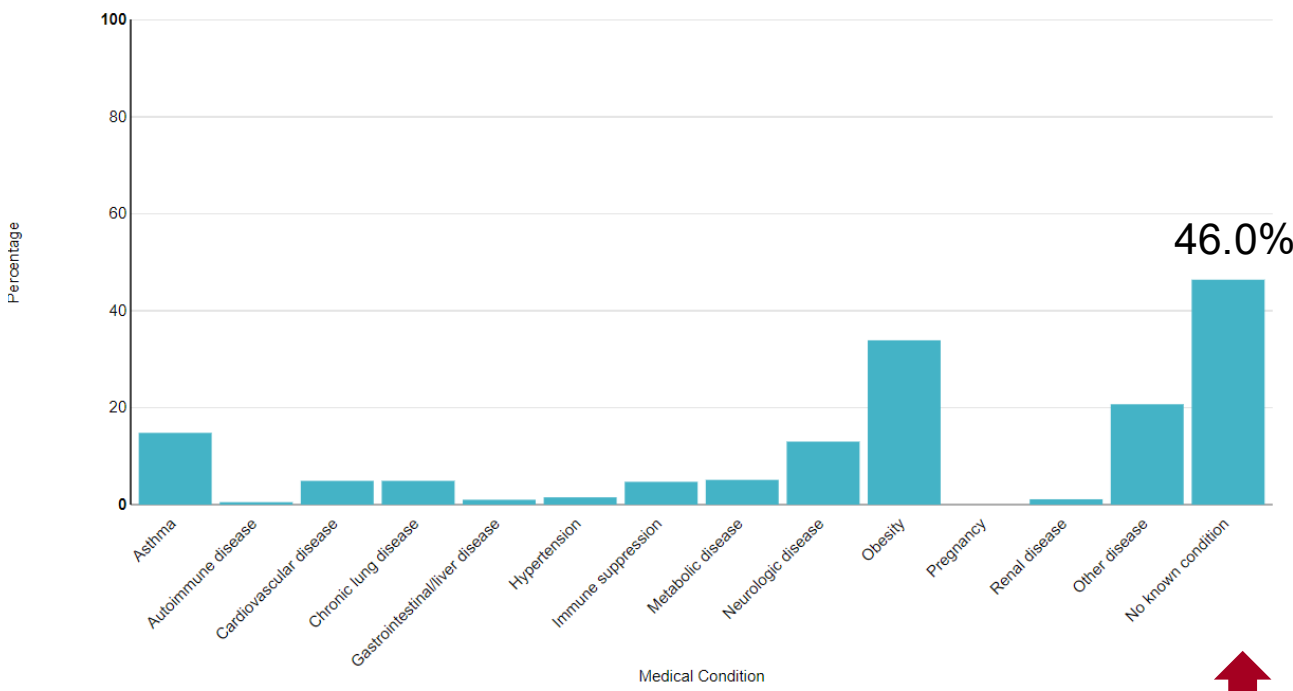
Other  
Indicators

Science  
Round-up

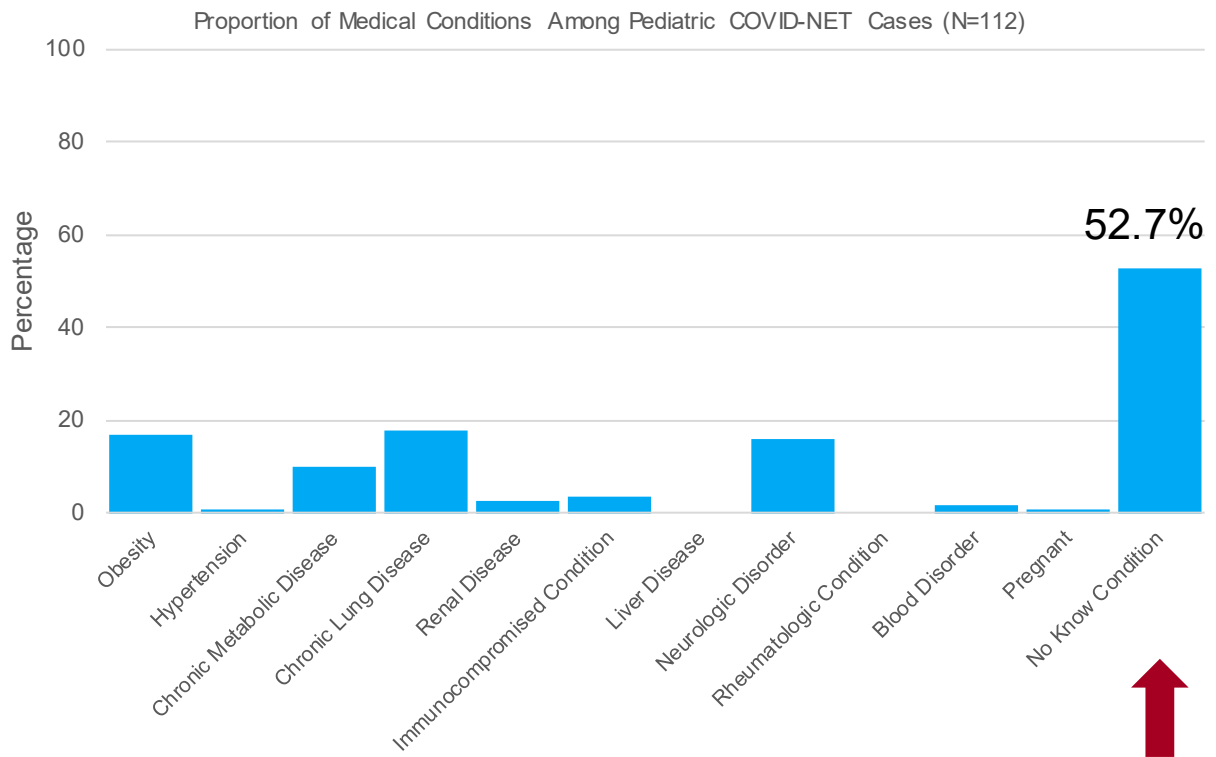
# SARS-CoV-2 can Negatively Impact Children Directly and Indirectly

- Children can experience severe health outcomes from COVID-19 including MIS-C and Hospitalization
  - Nationally, nearly half of children hospitalized have no reported underlying conditions<sup>†</sup>
  - In Michigan, over 50% of children hospitalized have not reported underlying conditions

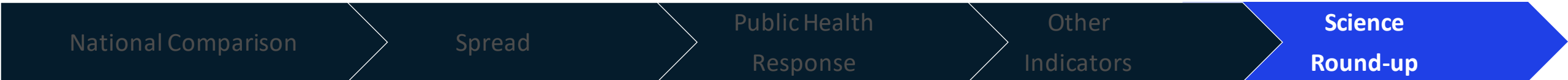
U.S. Pediatric Hospitalizations | Underlying Medical Conditions



MI Pediatric Hospitalizations | Underlying Medical Conditions



Sources: \*[CDC COVID Data Tracker > New Hospital Admissions](#); † [COVIDNET](#)

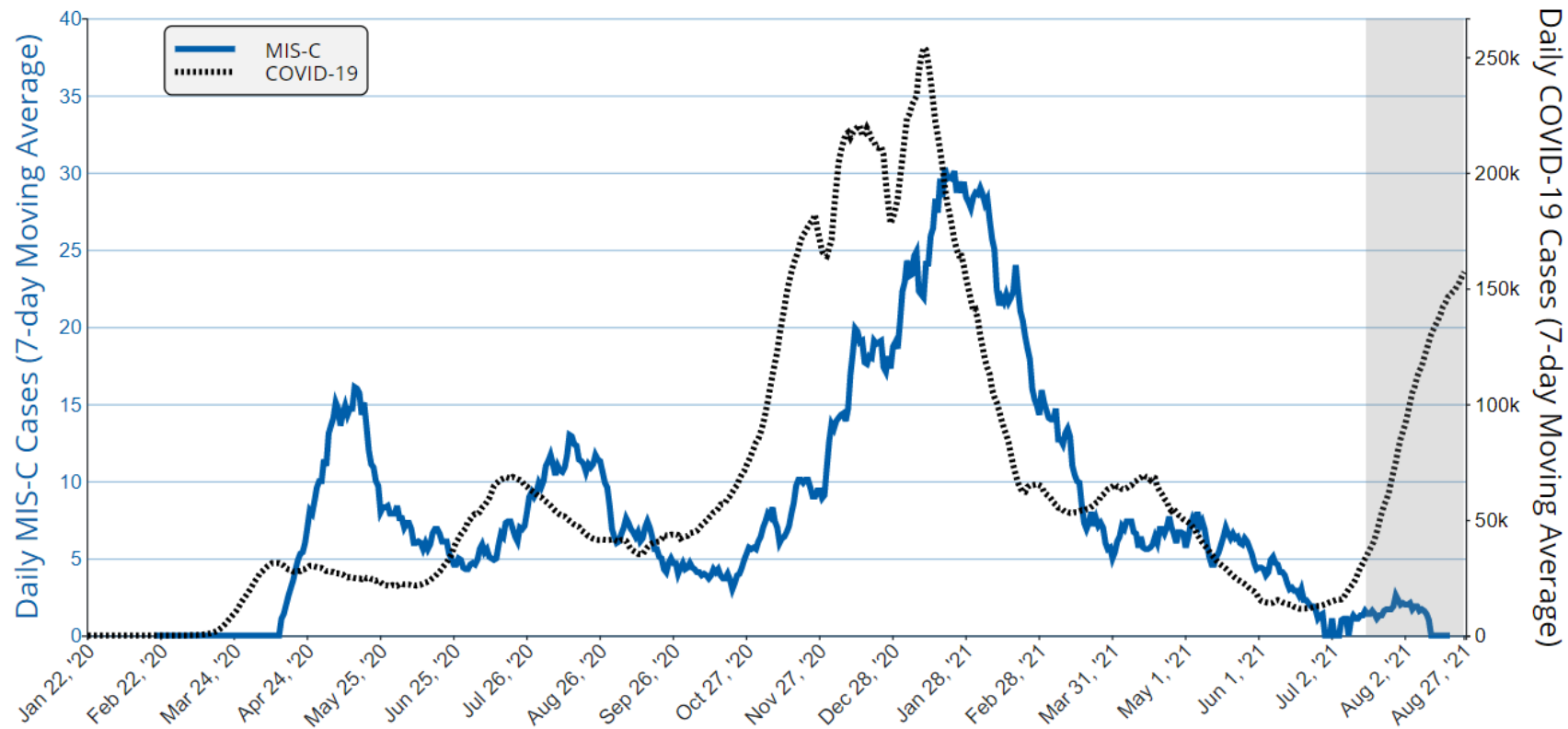


# SARS-CoV-2 can Negatively Impact Children Directly and Indirectly

## Multisystem Inflammatory Syndrome in Children (MIS-C)

- Higher community transmissions is followed by higher incidence of MIS-C cases

### Daily MIS-C Cases and COVID-19 Cases Reported to CDC (7-Day Moving Average)



Source: [MDHHS and MIS-C Data and Reporting](#)

National Comparison

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# SARS-CoV-2 can Negatively Impact Children Directly and Indirectly

## Multisystem Inflammatory Syndrome in Children (MIS-C)

- Higher community transmissions is followed by higher incidence of MIS-C cases
  - Many of those who experience MIS-C in Michigan are admitted to intensive care, school age, and are Black/African American

Multisystem Inflammatory Syndrome in Children (MIS-C) Michigan Data Summary 8/26/2021

# Cases Confirmed and Reported to CDC*	163
MIS-C associated Deaths	5 or fewer
Cases admitted to ICU	115 (70.6%)
Onset Date Range	4/14/20 to 7/30/2021
Age Range	0-20 years

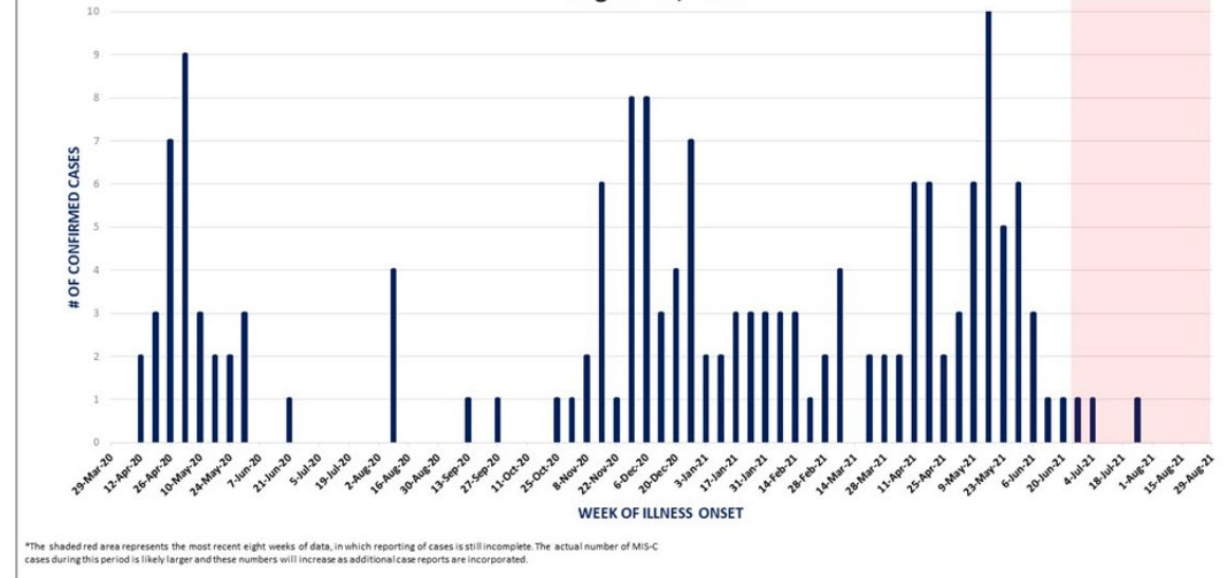
\*Meets CDC Case definition

<https://emergencv.cdc.gov/han/2020/han00432.aso>

DEMOGRAPHIC INFORMATION (N=163)

Age Group	Count	%	Race	Count	%
0-4 yrs	43	26.4%	Black/African American	71	43.6%
5-10 yrs	67	41.1%	Caucasian	67	41.1%
>10 yrs	53	32.5%	All Others / Unknown	25	15.3%
Gender	Counts	%	Ethnicity	Count	%
Male	93	57.1%	Not Hispanic or Latino	115	70.5%
Female	70	42.9%	Hispanic or Latino	13	8.0%
Unknown	0	0.0%	Unknown	35	21.5%

Confirmed Cases of MIS-C by Week of Onset in Michigan from April, 2020 through August 26, 2021



Red shading indicates the expected reporting lag for new cases. Cases with onset dates in this time period may not have been detected or reported yet.

Source: [MDHHS and MIS-C Data and Reporting](#)

National Comparison

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# Why do we still need mitigation measures?

DRAFT

National Comparison

Spread

Severity

Public Health  
Response

Other  
Indicators

Science  
Round-up

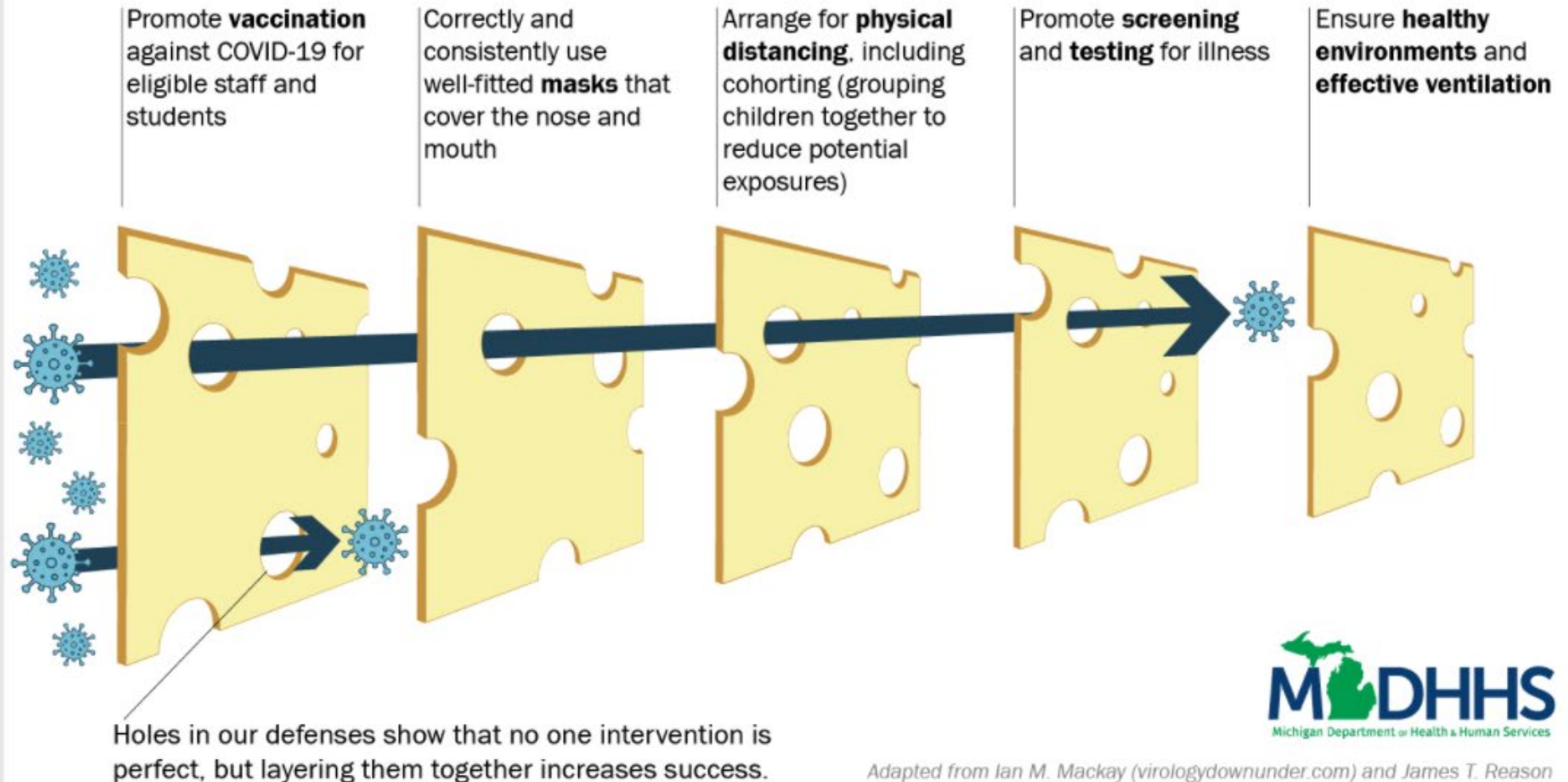
# Layers of Defense Against COVID-19 in Schools

CDC recommended prevention strategies can be layered in different ways – the number and intensity of the layers can increase if community transmission increases

As community transmission increases, more holes appear in the defenses, meaning more layers of protection may be needed.



As the vaccination rate within a building or facility increases, fewer holes will appear in the defenses.

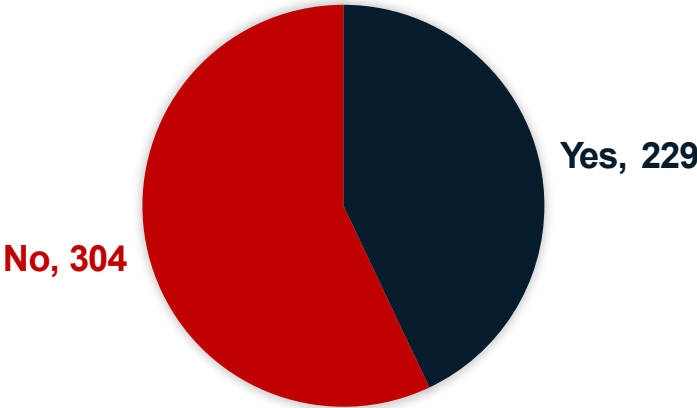


# MI School Districts and Mask Policy as of Sept 10, 2021

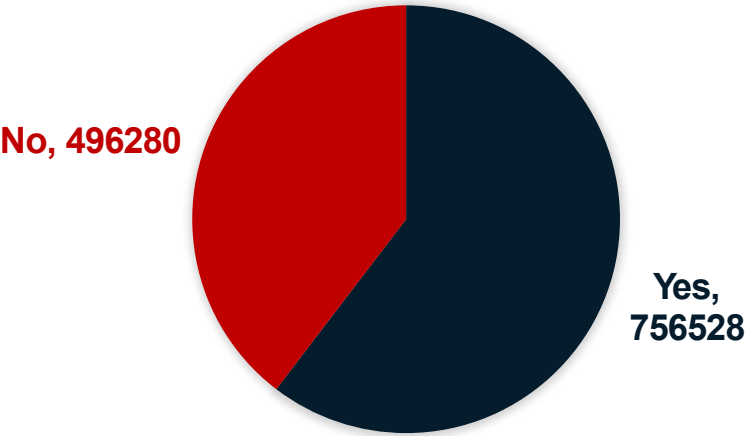
**Yes** – Any masking policy in some subset of school grades

**No** – No mask policies (includes unknown)

NUMBER OF SCHOOL DISTRICTS  
WITH MASK MANDATES IN K-12  
SETTING



NUMBER OF STUDENTS\* IN K-12  
SCHOOLS WITH MASK MANDATES



- 43% (229/533) of school districts have mandatory mask policy for students in all K-12 grades
- School districts with mandatory mask policies for all grades K-12 cover 60% (756,528/1,252,808) of all students\*

\* Student size based on school enrollment numbers; Buses and public transportation are federally required to enforce mask mandates

Source: Executive Office of Governor School District Mask Policy

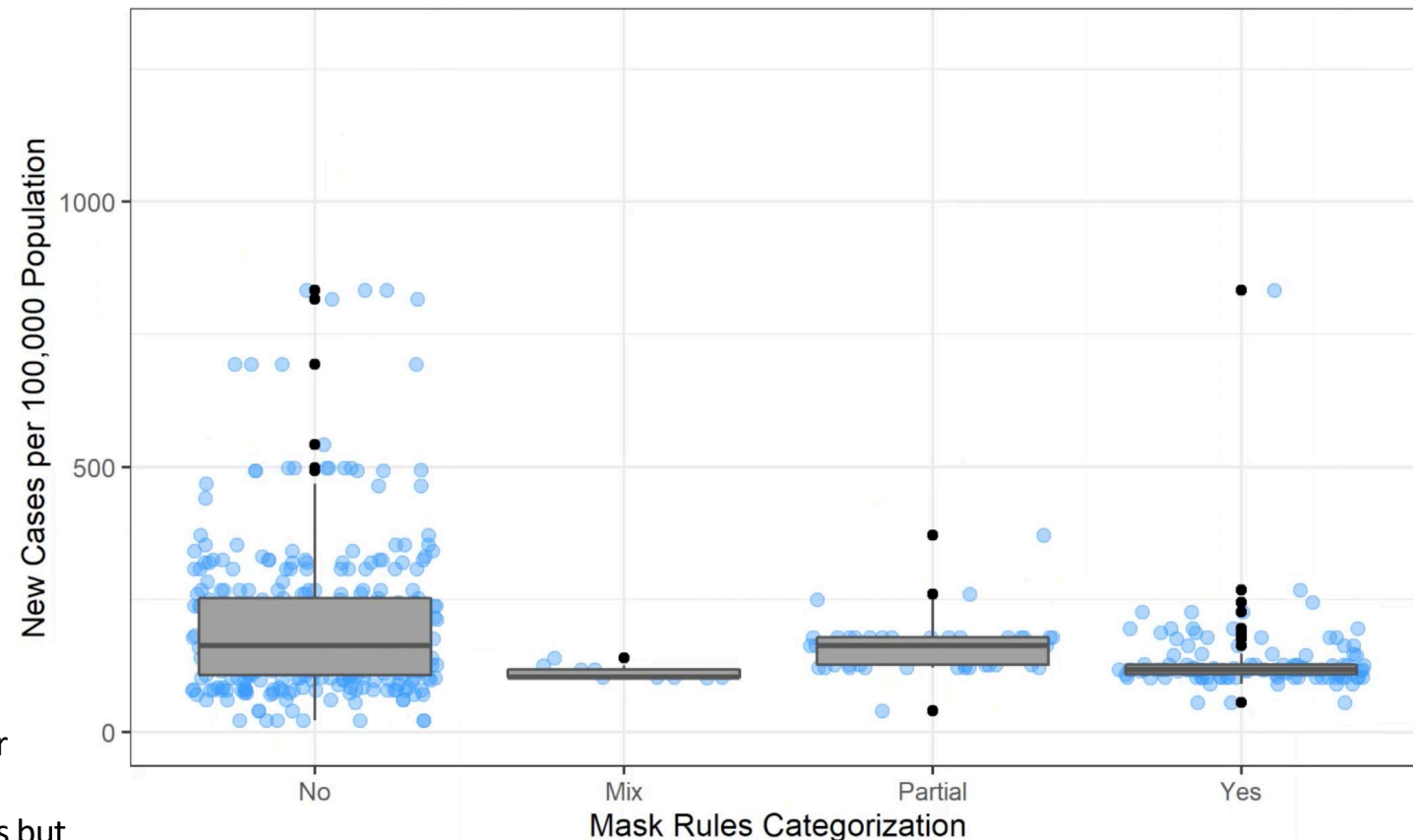


# School reopening: cases in children are increasing and case rates are higher in counties where school districts without masking

- Over the course of school reopening period (Aug 18 – Sep 8, from earliest to latest first day of school), the largest % increases have been among those <18 years
- Case rate range is higher in counties where school districts do not have mask rules

	Age group					
	0-11	12-18	19-30	31-50	51-65	>65
Change in 7-day avg. new cases during school reopening period (Aug 18 – Sep 8)	+57%	+96%	+12%	+5%	-2%	+3%

[2021-09-10] Michigan - COVID-19 Cases in School Aged Children [0-18]  
7 Day Sum of New Cases per 100,000 Population



Each blue dot is one school district, assigned the case number for its associated county  
Case data as of 9/13/2021

Data Sources: MDSS/MDHHS, Executive Office of Governor  
School District Mask Policy. Mask rules categories: Yes – Mandatory masking in all K-12 schools; Partial – All schools but not all K-12 grades (e.g., K-6); Mix – Not all schools, regardless of K-12 grades; No – No mask policies (includes unknown)